Exhibit 4

# Amendment and Compilation of Chapter 16-171 

 Hawaii Administrative RulesMM DD, YYYY

1. Chapter 16-171, Hawaii Administrative Rules, entitled, "Miscellaneous Insurance Rules", is amended and compiled to read as follows:
"HAWAII ADMINISTRATIVE RULES

TITLE 16

DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS

CHAPTER 171

MISCELLANEOUS INSURANCE RULES

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## SUBCHAPTER 1

## GENERAL PROVISIONS

§16-171-101 Definitions. As used in this chapter:
"Commissioner" means the insurance commissioner.
"Enrollee" means a person covered for health insurance by the insurer.
"Insured" means a person covered for insurance by the insurer.
"Insurer" means a person defined as an insurer pursuant to section 431:1-202, Hawaii Revised Statutes ("HRS").
"Managed care plan" means a health plan defined as a managed care plan pursuant to section 431:14G102, HRS. [Eff 1/1/05; am and comp 12/26/06; comp 03/28/08; comp 1/22/10; am and comp 12/13/12; comp 02/02/17; comp ] (Auth: HRS §431:2201) (Imp: HRS §§431:1-202, 431:2-102, 431:2-201, 431:14G-102)
§16-171-102 Repealed. [R 12/26/06]
§16-171-103 Written notice to claimants of payment of claims in third-party settlements. (a) Upon payment in settlement of any third-party liability claim, the insurer shall provide written notice to the claimant where:
(1) The claimant is a natural person; and
(2) The payment is delivered to the claimant's lawyer by draft, check, or otherwise.
(b) A written notice shall be required when the insurer or the insurer's representative, including the insurer's lawyer, makes payment to a claimant. [Eff
and comp 12/26/06; comp 03/28/08; comp 1/22/10; comp 12/13/12; comp 02/02/17; comp ] (Auth: HRS §431:2-201) (Imp: HRS §§431:1-202, 431:10-230)

SUBCHAPTER 2

HEALTH PROVISIONS
§16-171-201 Disclosure to enrollee or authorized representative. (a) Upon written request and payment of fifty dollars to a managed care plan by an enrollee or authorized representative, a managed care plan shall deliver, within ten business days of that request, to that enrollee or authorized representative data that forms the basis for the premium rates that the managed care plan seeks to charge the enrollee in the next enrollment period.
(b) Subject to subsection (c), the enrollee or authorized representative may request all pertinent information as to the rate including, but not limited to, the managed care plan's data for the enrollee relating to:
(1) Loss trend;
(2) Loss ratio;
(3) Annual financial statements of the managed care plan; and
(4) Its rate filing.
(c) A managed care plan shall not be required to disclose supporting information or supplementary rating information that:
(1) Consists of proprietary information, including trade secrets, commercial
information, and business plans that the commissioner deems may result in competitive harm to the managed care plan if disclosed;
(2) Is confidential in accordance with federal or Hawaii law; or
(3) Is exempt from disclosure by federal or Hawaii law. [Eff 1/1/05; comp 12/26/06; am and comp 03/28/08; comp 1/22/10; comp 12/13/12; am and comp 02/02/17; comp
] (Auth: HRS §431:2-201)
(Imp: HRS §§92F-13, 92F-22, 431:2-209, 431:14G-105, 431:14G-109)

## §16-171-202 Accident and health or sickness

filing requirement. Notwithstanding the need to have a plan qualified under section 393-7, HRS, a managed care plan shall file accident and health or sickness insurance contract rates with the commissioner that comply with title 24, HRS. [Eff 1/1/05; comp 12/26/06; comp 03/28/08; comp 1/22/10; comp 12/13/12; am and comp 02/02/17; comp (Auth: HRS §§431:2-201, 432:1-102, 432D-2) (Imp: HRS §431:14G-105)

## SUBCHAPTER 3

## LICENSING REQUIREMENTS

§16-171-301 Term of license. The term of the license granted pursuant to articles [9 and 9A] 8, 9, 9A, 9B, 9C, 9J, and 9N of chapter 431, [HRS, $]$ chapter 431C, and article 2 of chapter 432, HRS, shall be not less than one year and not more than three years. [Eff 1/1/05; comp 12/26/06; comp 03/28/08; comp 1/22/10; comp 12/13/12; comp 02/02/17; am and comp ] (Auth: HRS §§431:2-201, 431:9A-118) (Imp: HRS §§431:9-232, 431:9A-107, 432:2-609)
§16-171-302 License renewal or extension for a natural person. (a) The day for renewal or extension of a license issued to a natural person pursuant to articles [9 9A] 8, 9, 9A, 9B, 9C, 9J, and 9N of chapter 431, [HRS, $]$ chapter 431C, and article 2 of chapter 432, HRS, shall be the [sixteenth] last day of the licensee's birth month.
$f(b)$ The year for renewal or extension of a
license issued pursuant to articles 9 and 9A of ehapter 431, HRS, and article 2 of chapter 432, HRS, to a natural person born in even-numbered months shall be the next succeeding even-numbered year. The year for renewal or extension of a license issued pursuant to articles 9 and $9 \lambda$ of chapter 431, HRS, and article $Z$ of chapter 432, HRS, to a natural person born in odd-numbered months shall be the next succeeding oddnumbered year.
(c) The term of a license issued pursuant to articles 9 and 91 of chapter 431, HRS, and article 2 of chapter 432, HRS, shall be not less than one yeax and no more than threc years, as detcrmined by the eommissioner.
(d)] (b) This section shall not apply to provider certificates issued for continuing education courses. [Eff 1/1/05; comp 12/26/06; comp 03/28/08; comp 1/22/10; comp 12/13/12; am and comp 02/02/17; am and comp ] (Auth: HRS §§431:2-201, 431:9A-118) (Imp: HRS §§431:7-101, 431:9-232, 431:9A-107, 432:2-609)

## §16-171-303 Term of surplus lines broker;

license. The term of the surplus lines broker license issued pursuant to article 8 of chapter 431, HRS, shall be the same as the licensee's producer license issued pursuant to article 9A of chapter 431, HRS.
[Eff 1/1/05; comp 12/26/06; comp 03/28/08; comp 1/22/10; comp 12/13/12; comp 02/02/17; comp
] (Auth: HRS §§431:2-201, 431:9A-118)
(Imp: HRS §§431:7-101, 431:8-310, 431:9A-108)

## §16-171-304 License renewal or extension for a

 business entity. (a) The day for renewal or extension of a license issued to a business entity pursuant to articles [9 and 9A] 8, 9, 9A, 9B, 9C, 9J, and 9 N of chapter 431, [HRS, $]$ and chapter 431C, HRS, shall be the [sixteenth] last day of April for a nonresident licensee and the [sixteenth] last day of July for a resident licensee.$f(b)$ The year for renewal or extension for a nonresident business entity licensee shall be the next succeeding even-numbered year.
(c) The year for rencwal or extension for a resident business entity licensee shall be the next succeeding odd-numbered year. (d) The term of the license issued to a business entity pursuant to articles 9 and 9A of chapter 431, HRS, shall be not less than one year and no more than three years, as determined by the commissioner.
(c)] (b) This section shall not apply to provider certificates issued for continuing education courses. [Eff 1/1/05; comp 12/26/06; comp 03/28/08; comp 1/22/10; comp 12/13/12; am and comp 02/02/17; am and comp ] (Auth: HRS §§431:2-201, 431:9A-118) (Imp: HRS §§431:7-101, 431:9A-106, 431:9A-107)

§16-171-305 Payment of initial licensing and registration fees [and penalties], and renewal fees. Prior to the issuance, renewal, or extension of a license or registration, the licensee or registrant shall pay all applicable fees[and penalties]. [A service fee, consisting of annual fees for each full year or partial year included in the term, shall be paid by the licensee.] The fees for the initial term of the license or registration shall include an issuance fee pursuant to section 431:7-101(a), HRS, and a two-year service fee pursuant to section 431:7101(b), HRS. Renewals after the initial term shall

include a renewal fee which includes either a two-year service fee for a license or registration which is renewed biennially, or a one-year service fee for a license or registration which is renewed annually. There shall be no pro rata of the service fee. [Eff 1/1/05; comp 12/26/06; comp 03/28/08; comp 1/22/10; comp 12/13/12; comp 02/02/17; am and comp
] (Auth: HRS §§431:2-201, 431:9A-118) (Imp: HRS §§431:7-101, 431:9-232, 431:9A-107, 431:9A107.5, 432:2-609)
§16-171-306 Continuing education course credit. Credits earned for a continuing education course shall be valid for twenty-four months after the course provider determines that the licensee has successfully completed all course requirements. [Eff 1/1/05; comp 12/26/06: comp 03/28/08; comp 1/22/10; comp 12/13/12; comp 02/02/17; comp ] (Auth: HRS §§431:2-201, 431:9A-118) (Imp: HRS §§431:9A-124, 431:9A-155)
§16-171-307 Continuing education requirement for resident licensee [that acquires additional line of authority]. [Except for nonresident licensces subject to the reciprocity provisions of section 431:9A= $116(\mathrm{~b})$, HRS, a licensed producer who acquires an additional line of insurance through the examination process within the twenty-three months preceding the producer's renewal or extension date shall complete the continuing education requirement for the additional acquired line by the producer's next succeding renewal or extension date.] The continuing education compliance period for a resident licensee shall coincide with their license renewal date. [Eff 1/1/05; comp 12/26/06; comp 03/28/08; comp 1/22/10; am and comp 12/13/12; comp 02/02/17; am and comp
] (Auth: HRS $\$ \$ 431: 2-201,431: 9 A-118)$
(Imp: HRS §§431:9A-124, 431:9A-142, 431:9A-155, 432:2-609)
§16-171-308 Continuing education requirement for licensee reactivating a line of authority. Except for nonresident licensees subject to the reciprocity provisions of section 431:9A-116(b), HRS, a licensed producer who applies to reactivate a line of authority shall fulfill the continuing education requirement for the line of authority prior to its reactivation. [Eff 1/1/05; comp 12/26/06; comp 03/28/08; comp 1/22/10; am and comp 12/13/12; comp 02/02/17; comp
] (Auth: HRS §§431:2-201, 431:9A-118)
(Imp: HRS §§431:9A-124, 431:9A-142, 432:2-609)
§16-171-309 Continuing education prerequisite for business entity license renewal. Failure by the designated representative to complete the continuing education requirement on behalf of the business entity shall result in the business entity's and, if applicable, the designated representative's license being automatically placed on "inactive" status. [Eff 1/1/05; comp 12/26/06; comp 03/28/08; comp 1/22/10; am and comp 12/13/12; comp 02/02/17; comp (Auth: HRS §§431:2-201, 431:9A-118) (Imp: HRS §§431:9A-106, 431:9A-124, 431:9A-142, 432:2-609)
§16-171-310 Application for approval of a continuing education course. (a) A continuing education course provider seeking approval of a continuing education course shall submit an application to the commissioner at least sixty days prior to the proposed date the course will be offered.
(b) A continuing education course provider shall obtain the commissioner's prior approval for the course before advertising or soliciting for that
course. [Eff 1/1/05; comp 12/26/06; comp 03/28/08; comp 1/22/10; comp 12/13/12; comp 02/02/17; comp ] (Auth: HRS §§431:2-201, 431:9A-118) (Imp: HRS §431:9A-153)
§16-171-311 Passing examination score. An applicant for licensure under article 9 or article 9A of chapter 431, HRS, or article 2 of chapter 432, HRS, shall obtain a score of seventy or higher to pass the examination. [Eff 1/1/05; comp 12/26/06; comp 03/28/08; comp 1/22/10; comp 12/13/12; am and comp 02/02/17; comp ] (Auth: HRS §§431:2201, 431:9A-118) (Imp: HRS §§431:9-206, 431:9A-105, 432:2-609)
§16-171-312 Term of managing general agent
license. The term of licensure for a managing general agent license issued pursuant to article 9C of chapter 431, HRS, shall be the same as the licensee's producer license issued pursuant to article 9A of chapter 431, HRS. [Eff 1/1/05; comp 12/26/06; comp 03/28/08; comp 1/22/10; comp 12/13/12; comp 02/02/17; comp
] (Auth: HRS §§431:2-201, 431:9A-118)
(Imp: HRS §§431:7-101, 431:9A-107, 431:9A-108, 431:9C-102)
§16-171-313 Repealed. [R 12/13/12]
§16-171-314 Term of reinsurance intermediary broker and reinsurance intermediary manager licenses. The term of licensure for reinsurance intermediary broker and reinsurance intermediary manager licenses issued pursuant to article 9B of chapter 431, HRS, shall be the same as the licensee's producer license
issued pursuant to article 9A of chapter 431, HRS.
[Eff 1/1/05; comp 12/26/06; comp 03/28/08; comp 1/22/10; comp 12/13/12; comp 02/02/17; comp ] (Auth: HRS §§431:2-201, 431:9A-118) (Imp: HRS §§431:7-101, 431:9A-107, 431:9A-108, 431:9B-102)

## §16-171-315 Repealed. [R 12/13/12]

§16-171-316 [Term] Initial term of vehicle protection product [warrantors registrations.] warrantor registration. The initial term of vehicle protection product [warrantors' registrations] warrantor registration issued pursuant to chapter 481R, HRS, shall not be for [not more than one yeax and, unless renewed, less than one year and not more than three years and shall automatically expire on December 31 of each year [ - ], unless renewed. [Eff 1/1/05; comp 12/26/06; comp 03/28/08; comp 1/22/10; comp 12/13/12; comp 02/02/17; am and comp
] (Auth: HRS §§431:2-201, 481R-3)
(Imp: HRS $\$ \$ 431: 7-101,481 R-4)$
§16-171-317 [Term] Initial term of service
contract provider [registrations.] registration. The initial term of a service contract [providers' registrations] provider registration issued pursuant to chapter 481X, HRS, shall not be for [not more than one year and, unless renew,] less than one year and not more than three years and shall automatically expire on July [15] 31 of each year[-], unless renewed. [Eff 1/1/05; comp 12/26/06; comp 03/28/08; comp 1/22/10; comp 12/13/12; comp 02/02/17; am and comp ] (Auth: HRS §\$431:2-201, 481X11) (Imp: HRS §§431:7-101, 481X-3)
§16-171-318 Electronic mail address is required of all licensees, registrants, certificate holders, certificate of authority holders. All licensees, registrants, and certificate holders shall provide the commissioner with an electronic mail address to receive communications from the commissioner. Communications sent to the electronic mail address shall be construed as actual notice to the licensee, registrant, certificate holder, or certificate of authority holder for all purposes, but not as a service of legal process. [Eff 12/13/12; comp 02/02/17; comp ] (Auth: HRS §§431:2201, 431:19-102, 431K-13, 432:1-102, 432D-2, 481R-3, 481X-11) (Imp: HRS §§431:9-204, 431:9A-106, 431:9A108, 431:9A-142, 431:9A-151, 431:19-102, 431K-2, 432:1-302, 432:2-609, 432D-2, 481R-4, 481X-3, 488-3)
§16-171-319 Renewal for registration. The day for renewal or extension of a registration issued to a registrant shall be the last day of the designated month. [Eff and comp ] (Auth: HRS §§431:2-201, 431S-6, 481R-3, 481X-11) (Imp: HRS §§431S-4, 481R-4, 481X-3)

## \$16-171-320 Initial term of pharmacy benefit

manager registration. The initial term of a pharmacy benefit manager registration issued pursuant to chapter 431S, HRS, shall not be less than one year and not more than three years and shall automatically expire on March 31 of each year, unless renewed. [Eff and comp ] (Auth: HRS §§431:2-201, 431S-6) (Imp: HRS §431S-4)
§16-171-321 Initial term of limited lines portable electronics producer license. The initial term of limited lines portable electronics producer license issued pursuant to article 31, chapter 431, HRS, shall not be less than one year and not more than three years. [Eff and comp ] (Auth: HRS §§431:2-201) (Imp: HRS §431:31-102)
§16-171-322 Reinstatement fee. If a license or registration was inactivated due to a nonrenewal, an incomplete continuing education, or failure to meet other applicable requirements, the license or registration may be reinstated within one year of inactivation provided the applicable fees and penalties have been paid and any applicable continuing education or other requirements have been met. The fee for reinstatement shall include any unpaid renewal fees and penalty fees. If more than one year has passed since the inactivation, the applicant must apply as a new applicant. [Eff and comp
] (Auth: HRS §§431:2-201, 431:9A-118, 431:9B-111, 431:9C-107, 431:9J-114, 431C-53, 431S-6, 481R-3, 481X-11) (Imp: HRS §§431:8-310, 431:9-232, 431:9A-107, 431:9B-102, 431:9C-102, 431:9J-102, 431C$3,432: 2-609,431 S-3,481 R-4,481 X-3)$

## §16-171-323 Reinstatement after license or

 registration has been surrendered voluntarily. The license or registration may be reinstated within one year from the date of surrender if a license or registration was voluntarily surrendered, provided a two-year service fee has been paid and any applicable continuing education requirements have been met. If more than one year has passed since the voluntary surrender, the applicant must apply as a newapplicant. [Eff and comp ] (Auth: HRS §§431:2-201, 431:9A-118, 431:9B-111, 431:9C-107, 431:9J-114, 431C-53, 431S-6, 481R-3, 481X-11) (Imp:

HRS §§431:8-310, 431:9-232, 431:9A-107, 431:9B-102, 431:9C-102, 431:9J-102, 431C-3, 432:2-609, 431S-3, 481R-4, 481X-3)

## §16-171-324 Electronic filings through

nongovernmental entities. The commissioner may mandate all holders of licenses or registrations to apply for licensure or registration electronically through the nongovernmental entities. [Eff and comp
] (Auth: HRS §431:2-201) (Imp: HRS §§431:8-321, 431:9-204, 431:9A-106, 431:9B-102, 431:9C-102, 431:9J-102, 431:31-102, 431C-3, 431S-3, 432:2-609, 481R-4, 481X-3)

## SUBCHAPTER 4

CSO MORTALITY TABLE FOR USE IN DETERMINING MINIMUM RESERVE LIABILITIES AND NONFORFEITURE BENEFITS
§16-171-401 Purpose. The purpose of this subchapter is to authorize the use of the 2001 Commissioners' Standard Ordinary ("CSO") Mortality Table for the computation of the minimum reserve standard for nonforfeiture and valuation of life insurance policies and contracts. [Eff 1/1/05; comp 12/26/06; comp 03/28/08; comp 1/22/10; comp 12/13/12; am and comp 02/02/17; comp ] (Auth: HRS §§431:2-201, 431:5-401) (Imp: HRS §§431:5307 (c) (2) (A), 431:10D-104(e) (8) (G) (vii))
§16-171-402 Definitions. As used in this subchapter:
"2001 CSO Mortality Table" means that mortality table, consisting of separate rates of mortality for male and female lives, developed by the American Academy of Actuaries CSO Task Force from the valuation basic mortality table developed by the Society of Actuaries Individual Life Insurance Valuation Mortality Task Force, and adopted by the National Association of Insurance Commissioners in December 2002 (the 2001 CSO Mortality Table is included in the Proceedings of the NAIC (2nd Quarter 2002)). Unless the context indicates otherwise, the "2001 CSO Mortality Table" includes both the ultimate form of that table and the select and ultimate form of that table and includes both the smoker and nonsmoker mortality tables and the composite mortality tables. It also includes both the age-nearest-birthday and age-last-birthday bases of the mortality tables.
" 2001 CSO Mortality Table (F)" means that portion of the 2001 CSO Mortality Table that consists of the rates of mortality for female lives.
" 2001 CSO Mortality Table (M)" means that portion of the 2001 CSO Mortality Table that consists of the rates of mortality for male lives from the 2001 CSO Mortality Table.
"Composite mortality tables" means that portion of the 2001 CSO Mortality Table that consists of rates of mortality that do not distinguish between smokers and nonsmokers.
"Smoker and nonsmoker mortality tables" means that portion of the 2001 CSO Mortality Table that consists of separate rates of mortality for smokers and nonsmokers. [Eff 1/1/05; comp 12/26/06 comp 03/28/08; comp 1/22/10; comp 12/13/12; am and comp 02/02/17; comp ] (Auth: HRS §§431:2201, 431:5-401) (Imp: HRS §§431:5-307(C)(2)(A), 431:10D-104 (e) (8) (G) (vii))
§16-171-403 2001 CSO Mortality Table. (a) At the election of the insurer and for any one or more of the insurer's specified plans of insurance and subject
to the conditions stated in section 16-171-404, the 2001 CSO Mortality Table may be used as the minimum standard for policies issued on or after January 1, 2005, and in sections 431:5-307 and 431:10D-104, as applicable. If the insurer elects to use the 2001 CSO Mortality Table, it shall do so for both valuation and nonforfeiture purposes.
(b) Subject to the conditions stated in section 16-171-404, insurers shall use the 2001 CSO Mortality Table in determining minimum standards for policies issued on and after January 1, 2009, in sections 431:5-307 and 431:10D-104, HRS. [Eff 1/1/05; comp 12/26/06; comp 03/28/08; comp 1/22/10; comp 12/13/12; am and comp 02/02/17; comp ] (Auth: HRS §§431:2-201, 431:5-401) (Imp: HRS §§431:5307 (c) (2) (A), 431:10D-104(e)(8) (G) (vii))
§16-171-404 Conditions. (a) For each plan of insurance with separate rates for smokers and nonsmokers an insurer may use:
(1) Composite mortality tables to determine minimum reserve liabilities, minimum cash surrender values, and amounts of paid-up nonforfeiture benefits;
(2) Smoker and nonsmoker mortality tables to determine the valuation net premiums and additional minimum reserves, if any, required by sections 431:5-307 and 431:10D104, HRS, and use composite mortality tables to determine the basic minimum reserves, minimum cash surrender values and amounts of paid-up nonforfeiture benefits; or
(3) Smoker and nonsmoker mortality to determine minimum reserve liabilities, minimum cash surrender values, and amounts of paid-up nonforfeiture benefits.
(b) For plans of insurance without separate rates for smokers and nonsmokers, the insurers shall use the composite mortality tables.
(c) For the purpose of determining minimum reserve liabilities, minimum cash surrender values, and amounts of paid-up nonforfeiture benefits, the 2001 CSO Mortality Table may, at the option of the insurer for each plan of insurance, be used in its select and ultimate form.
(d) When the 2001 CSO Mortality Table is the minimum reserve standard for any plan for an insurer, the actuarial opinion in the annual statement filed by the insurer with the commissioner shall be based on an asset adequacy analysis as specified in sections 431:5-307 and 431:10D-104, HRS. Upon application, the commissioner may exempt an insurer from this requirement only if it does business in this State and in no other state. [Eff 1/1/05; comp 12/26/06; comp 03/28/08; comp 1/22/10; comp 12/13/12; comp 02/02/17; comp ] (Auth: HRS §\$431:2-201, 431:5401) (Imp: HRS §§431:5-307(c)(2)(A), 431:10D104 (e)(8) (G) (vii))
§16-171-405 Gender-blended tables. (a) For any ordinary life insurance policy delivered or issued for delivery in this State on and after January 1, 2005, that utilizes the same premium rates and charges for male and female lives or is issued in circumstances where applicable law does not permit distinctions on the basis of gender, a mortality table that is a blend of the 2001 CSO Mortality Table (M) and the 2001 CSO Mortality Table (F) may, at the option of the insurer for each plan of insurance, be substituted for the 2001 CSO Mortality Table for use in determining minimum cash surrender values and amounts of paid-up nonforfeiture benefits. No change in minimum valuation standards is implied by this subsection of the subchapter.
(b) The insurer may choose from among the blended tables within the 2001 CSO Mortality Table by the American Academy of Actuaries CSO Task Force and adopted by the NAIC in December 2002.
(c) It shall not, in and of itself, be a violation of article 13 of chapter 431, HRS, for an insurer to issue the same kind of policy of life insurance on both a sex-distinct and sex-neutral basis. [Eff 1/1/05; comp 12/26/06; comp 03/28/08; comp 1/22/10; comp 12/13/12; comp 02/02/17; comp ] (Auth: HRS §§431:2-201, 431:5-401) (Imp: HRS §§431:5-307(c)(2)(A), 431:10D104 (e) (8) (G) (vii))

## SUBCHAPTER 5

PREFERRED MORTALITY TABLES FOR USE IN DETERMINING MINIMUM RESERVE LIABILITIES
§16-171-501 Purpose. The purpose of this subchapter is to recognize, permit, and prescribe the use of mortality tables that reflect differences in mortality between preferred and standard lives in determining minimum reserve liabilities in accordance with sections 431:5-307 and 431:10D-104, HRS. [Eff 03/28/08; comp 1/22/10; comp 12/13/12; am and comp 02/02/17; comp ] (Auth: HRS §§431:2201, 431:5-401) (Imp: HRS §§431:5-307(c), 431:10D104 (e))
§16-171-502 Definitions. As used in this subchapter:
"2001 CSO Mortality Table" means that mortality table, consisting of separate rates of mortality for male and female lives, developed by the American Academy of Actuaries CSO Task Force from the Valuation Basic Mortality Table developed by the Society of Actuaries Individual Life Insurance Valuation Mortality Task Force and adopted by the NAIC in

December 2002. The 2001 CSO Mortality Table is included in the Proceedings of the NAIC (2nd Quarter 2002) and supplemented by the 2001 CSO Preferred Class Structure Mortality Table. Unless indicated otherwise, the 2001 CSO Mortality Table includes:
(1) Both the ultimate form of that table and the select and ultimate form of that table;
(2) Both the smoker and nonsmoker mortality tables and the composite mortality tables;
(3) Both the age-nearest-birthday and age-lastbirthday bases of the mortality tables;
(4) The "2001 CSO Mortality Table (F)" that consists of the rates of mortality for female lives from the 2001 CSO Mortality Table;
(5) The "2001 CSO Mortality Table (M)" that consists of the rates of mortality for male lives from the 2001 CSO Mortality Table;
(6) The "Composite mortality tables" that consist of tables with rates of mortality that do not distinguish between smokers and nonsmokers; and
(7) The "Smoker and nonsmoker mortality tables" that consist of mortality tables with separate rates of mortality for smokers and nonsmokers.
" 2001 CSO Preferred Class Structure Mortality Table" means mortality tables with separate rates of mortality for Super Preferred Nonsmokers, Preferred Nonsmokers, Residual Standard Nonsmokers, Preferred Smokers, and Residual Standard Smoker splits of the 2001 CSO Nonsmoker and Smoker tables as adopted by the NAIC at the September 2006 national meeting and published in the NAIC Proceedings (3rd Quarter 2006). Unless the context indicates otherwise, the 2001 CSO Preferred Class Structure Mortality Table includes:
(1) Both the ultimate form of that table and the select and ultimate form of that table;
(2) Both the smoker and nonsmoker mortality tables found in the 2001 CSO Mortality Table;
(3) Both the male and female mortality tables and the gender composite mortality tables found in the 2001 CSO Mortality Table; and Both the age-nearest-birthday and age-lastbirthday bases of the mortality table found in the 2001 CSO Mortality Table.
"CSO" means Commissioners' Standard Ordinary.
"NAIC" means the National Association of Insurance Commissioners.
"Statistical agent" means an entity with proven systems for protecting the confidentiality of individual insured and insurer information, demonstrated resources for and history of ongoing electronic communications and data transfer ensuring data integrity with insurers, which are its members or subscribers, and a history of and means for aggregation of data and accurate promulgation of the experience modifications in a timely manner. [Eff 03/28/08; comp 1/22/10; comp 12/13/12; am and comp 02/02/17; comp ] (Auth: HRS §§431:2201, 431:5-401) (Imp: HRS §§431:5-307(c), 431:10D104 (e))

## §16-171-503 2001 CSO Preferred Class Structure

Table. (a) At the election of insurer, for each calendar year of issue, for any one or more specified plans of insurance and subject to satisfying the conditions stated in this subchapter, the 2001 CSO Preferred Class Structure Mortality Table may be substituted in place of the smoker and nonsmoker mortality tables, found in the 2001 CSO Mortality Table, as the minimum valuation for policies issued.
(b) No such election shall be made until the insurer demonstrates at least twenty per cent of the business to be valued on this table is in one or more of the preferred classes.
(c) A table from the 2001 CSO Preferred Class Structure Mortality Table used in place of a 2001 CSO Mortality Table, pursuant to the requirements of this section, will be treated as part of the 2001 CSO

Mortality Table only for purposes of reserve valuation pursuant to the requirements of subchapter 4, title 16, chapter 171, HAR. [Eff 03/28/08; comp 1/22/10; comp 12/13/12; am and comp 02/02/17; comp
] (Auth: HRS §§431:2-201, 431:5-401)
(Imp: HRS §§431:5-307(c), 431:10D-104(e))
§16-171-504 Conditions. (a) For each plan of insurance with separate rates for preferred and standard nonsmoker lives, an insurer may use the Super Preferred Nonsmoker, Preferred Nonsmoker, and Residual Standard Nonsmoker tables to substitute for the nonsmoker mortality table found in the 2001 CSO Mortality Table to determine minimum reserves. At the time of election and annually thereafter, except for business valued under the Residual Standard Nonsmoker Table, the appointed actuary shall certify that:
(1) The present value of death benefits over the next ten years after the valuation date, using the anticipated mortality experience without recognition of mortality improvement beyond the valuation date for each class, is less than the present value of death benefits using the valuation basic table corresponding to the valuation table being used for that class; and
(2) The present value of death benefits over the future life of the contracts, using anticipated mortality experience without recognition of mortality improvement beyond the valuation date for each class, is less than the present value of death benefits using the valuation basic table corresponding to the valuation table being used for that class.
(b) For each plan of insurance with separate rates for preferred and standard smoker lives, an insurer may use the Preferred Smoker and Residual Standard Smoker tables to substitute for the smoker mortality table found in the 2001 CSO Mortality Table
to determine minimum reserves. At the time of election and annually thereafter, for business valued under the Preferred Smoker Table, the appointed actuary shall certify that:
(1) The present value of death benefits over the next ten years after the valuation date, using the anticipated mortality experience without recognition of mortality improvement beyond the valuation date for each class, is less than the present value death benefits using the preferred smoker valuation basic table corresponding to the valuation table being used for that class; and
(2) The present value of death benefits over the future life of the contracts, using anticipated mortality experience without recognition of mortality improvement beyond the valuation date for each class, is less than the present value of death benefits using the preferred smoker valuation basic table.
(c) Unless exempted by the commissioner, every authorized insurer using the 2001 CSO Preferred Class Structure Mortality Table shall annually file with the commissioner, the NAIC, or a statistical agent designated by the NAIC and acceptable to the commissioner, statistical reports showing mortality and such other information as the commissioner may deem necessary or expedient for the administration of the provisions of this section. The form of the reports shall be established by the commissioner, or the commissioner may require the use of a form established by the NAIC or by a statistical agent designated by the NAIC and acceptable to the commissioner. [Eff 03/28/08; comp 1/22/10; comp 12/13/12; am and comp 02/02/17; comp ] (Auth: HRS §§431:2-201, 431:5-401) (Imp: HRS §§431:5-307(c), 431:10D-104(e))

MILITARY SALES PRACTICES

§16-171-601 Purpose and authority. (a) The purpose of this subchapter is to protect active duty service members of the United States Armed Forces from dishonest and predatory insurance sales practices by declaring certain identified practices to be false, misleading, deceptive, or unfair.
(b) Nothing herein shall be construed to create or imply a private cause of action for a violation of this subchapter.
(c) This subchapter is adopted under the authority of section 431:2-201.8, HRS. [Eff 03/28/08; comp 1/22/10; comp 12/13/12; am and comp 02/02/17; comp ] (Auth: HRS §§431:2-201, 431:2201.8) (Imp: HRS §431:1-201.8)
§16-171-602 Definitions. As used in this subchapter:
"Active duty" means full-time duty in the active military service of the United States Armed Forces, National Guard, and reserves while serving under published orders for active service or full-time training. The term does not include members of the National Guard and reserves who are performing active duty or active duty for training under military calls or orders specifying periods of less than thirty-one calendar days.
"Department of Defense, "DD", or "DoD" means all active duty service members and all civilian employees, including nonappropriated fund employees and special government employees of that government agency.
"Door to door" means a solicitation or sales method whereby an insurance producer or insurer proceeds randomly or selectively from household to household without prior specific appointment.
"General advertisement" means an advertisement having as its sole purpose the promotion of the reader's or viewer's interest in the concept of insurance, or the promotion of the insurer or the insurance producer.
"Insurance producer" means a person required to be licensed under the laws of the State of Hawaii to sell, solicit, or negotiate life insurance, including annuities.
"Insurer" means an insurance company required to be licensed under the laws of the State of Hawaii to provide life insurance products, including annuities.
"IRC" means the Internal Revenue Code.
"Known" or "knowingly", depending on its use herein, means the insurance producer or insurer had actual awareness, or in the exercise of ordinary care should have known at the time of the act or practice complained of, that the person solicited:
(1) Is a service member; or
(2) Is a service member with a pay grade of E-4 or below.
"Life insurance" means insurance coverage on human lives, including benefits of endowments and annuities, and may include benefits in the event of death or dismemberment by accident and benefits for disability income and, unless otherwise specifically excluded, includes individually issued annuities.
"Military installation" means any federally owned, leased, or operated base, reservation, post, camp, building, or other facility to which service members are assigned for duty, including barracks, transient housing, and family quarters.
"MyPay" is a Defense Finance and Accounting Service web-based system that enables service members to process certain discretionary pay transactions or provide updates to personal information data elements without using paper forms.
"Service member" means any active duty officer, commissioned and warrant, or enlisted member of the United States Armed Forces.

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"SGLI" means a contract offered by Servicemembers' Group Life Insurance, as authorized by 38 U.S.C. section 1965 et seq.
"Side fund" means an account or reserve that is part of or otherwise attached to a life insurance policy, excluding individually issued annuities by rider, endorsement, or other means. The term "side fund" does not include:
(1) Accumulated value or cash value or secondary guarantees provided by a universal life policy;
(2) Cash values provided by a whole life policy which are subject to standard nonforfeiture law for life insurance; or
(3) A premium deposit fund which:
(A) Contains only premiums paid in advance which accumulate at interest;
(B) Imposes no penalty for withdrawal;
(C) Does not permit funding beyond future required premiums;
(D) Is not marketed or intended as an investment; and
(E) Does not carry a commission, either paid or calculated.
"Solicitation" means the sale or negotiation of any life insurance or annuity product by an insurer of insurance producer in this State.
"Specific appointment" means a prearranged appointment agreed upon by an insurer or a producer and a service member at a definite place and time.
"United States Armed Forces" means all components of the United States army, navy, air force, marine corps, and coast guard.
"VGLI" means a contract offered by Veterans' Group Life Insurance, as authorized by 38 U.S.C. section 1965 et seq. (Eff 03/28/08; comp 1/22/10; comp 12/13/12; am and comp 02/02/17; comp ] (Auth: HRS §§431:2-201; 431:2201.8) (Imp: HRS §431:1-201.8)
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§16-171-603 Scope and exemptions. (a) This subchapter shall apply only to the solicitation or sale of any life insurance or annuity product by an insurer or insurance producer to an active duty service member of the United States Armed Forces.
(b) This subchapter shall not apply to solicitations or sales involving:
(1) Credit insurance;
(2) Group life insurance or group annuities where there is no in-person, face-to-face solicitation of individuals by an insurance producer or insurer or where the contract or certificate does not include a side fund;
(3) An application to the existing insurer that issued the existing policy or contract when a contractual change or a conversion privilege is being exercised, when the existing policy or contract is being replaced by the same insurer pursuant to a program filed with and approved by the commissioner or when a term conversion privilege is exercised among corporate affiliates;
(4) Individual stand-alone health policies, including disability income policies;
(5) Except as provided herein, contract offered by SGLI or VGLI, as authorized by 38 U.S.C. section 1965 et seq.;
(6) Life insurance contracts offered through or by a non-profit military association, qualifying under section $501(c)(23)$ of the IRC, and which are not underwritten by an insurer; or
(7) Contracts used to fund:
(A) An employee pension or welfare benefit plan that is covered by the Employee Retirement and Income Security Act ("ERISA");
(B) A plan described by sections $401(a)$, $401(\mathrm{k}), 403(\mathrm{~b}), 408(\mathrm{k})$, and $408(\mathrm{p})$ of the IRC, as amended, if established or maintained by an employer;
(C) A government or church plan defined in section 414 of the IRC, a government or church welfare benefit plan, or a deferred compensation plan of a state or local government or tax-exempt organization under section 457 of the IRC;
(D) A nonqualified deferred compensation arrangement established or maintained by an employer or a plan sponsor;
(E) Settlements or assumptions or liabilities associated with personal injury litigation or any dispute or claim resolution process; or
(F) Prearranged funeral contracts.
(8) Nothing herein shall be construed to abrogate the ability of nonprofit organizations or other organizations to educate members of the United States Armed Forces in accordance with Department of Defense DoD Instruction 1344.07, Personal Commercial Solicitation on DoD Installations, or successor directive.
(9) For purposes of this regulation, general advertisements, direct mail and internet marketing shall not constitute "solicitation". Telephone marketing shall not constitute "solicitation" provided the caller explicitly and conspicuously discloses that the product concerned involves life insurance or an annuity and makes no statements that preclude a clear and unequivocal understanding that life insurance or any annuity is the only subject matter of the solicitation. Provided, however, that nothing in this subsection shall be construed to relieve an insurer or insurance producer from this regulation in any in-person, face-to-face meeting established as a result of the "solicitation" exemptions identified in this subsection. [Eff 03/28/08; comp 1/22/10;

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comp 12/13/12; am and comp 02/02/17; comp
    ] (Auth: HRS §$431:2-201,
431:2-201.8) (Imp: HRS §431:1-201.8)
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§16-171-604 Practices declared false, misleading, deceptive, or unfair on a military installation. (a) The following acts or practices when committed on a military installation by an insurer or insurance producer with respect to the inperson, face-to-face solicitation of life insurance are declared to be false, misleading, deceptive, or unfair:
(1) Knowingly soliciting the purchase of any life insurance product "door to door" or without first establishing a specific appointment for each meeting with the prospective purchaser;
(2) Soliciting service members in a group or "mass" audience or in a "captive" audience where attendance is not voluntary;
(3) Knowingly making appointments with or soliciting service members during their normally scheduled duty hours;
(4) Making appointments with or soliciting service members in barracks, day rooms, unit areas, transient personnel housing, or other areas where the installation commander has prohibited solicitation;
(5) Soliciting the sale of life insurance without first obtaining permission from the installation commander or the commander's designee;
(6) Posting unauthorized bulletins, notices, or advertisements;
(7) Failing to present DD Form 2885, Personal Commercial Solicitation Evaluation, to service members solicited or encouraging service members solicited not to complete or submit form DD 2885; or
(8) Knowingly accepting an application for life insurance or issuing a policy of life insurance on the life of an enlisted member of the United States Armed Forces without first obtaining for the insurer's files a completed copy of any required form which confirms that the applicant has received counseling or fulfilled any other similar requirement for the sale of life insurance established by regulations, directives, or rules of the DoD or any branch of the Armed Forces.
(b) The following acts or practices when committed on a military installation by an insurer or insurance producer constitute a corrupt practice, improper influence, or inducement and are declared to be false, misleading, deceptive or unfair:
(1) Using DoD personnel, directly or indirectly, as a representative or agent in any official or business capacity with or without compensation with respect to the solicitation or sale of life insurance to service members; or
(2) Using an insurance producer to participate in any United States Armed Forces sponsored education or orientation program. (Eff 03/28/08; comp 1/22/10; comp 12/13/12; am and comp 02/02/17; comp ] (Auth: HRS §§431:2-201; 431:2-201.8) (Imp: HRS §431:1-201.8)

## §16-171-605 Practices declared false,

 misleading, deceptive, or unfair regardless of location. (a) The following acts or practices by an insurer or insurance producer constitute a corrupt practice, improper influence, or inducement and are declared to be false, misleading, deceptive, or unfair. They include, but are not limited to:(1) Submitting, processing or assisting in the submission or processing of any allotment
form or similar device used by the United States Armed Forces to direct a service member's pay to a third party for the purchase of life insurance. The foregoing includes, but is not limited to, using or assisting in using a service member's "MyPay" account or other similar internet or electronic medium for that purpose. This subsection does not prohibit assisting a service member by providing insurer or premium information necessary to complete any allotment form;
(2) Knowingly receiving funds from a service member for the payment of premium from a depository institution with which the service member has no formal banking relationship. For purposes of this section, a formal banking relationship is established when the depository institution:
(A) Provides the service member with a deposit agreement and periodic statements and makes the disclosures required by the Truth in Savings Act, 12 U.S.C. section 4301 et seq. and the regulations promulgated thereunder; and
(B) Permits the service member to make deposits and withdrawals unrelated to the payment of processing of insurance premiums;
(3) Employing any device or method or entering into any agreement whereby funds received from a service member by allotment for the payment of insurance premiums are identified on the service member's Leave and Earnings Statement or equivalent or successor form as "Savings" or "Checking" and where the service member has no formal banking relationship as defined in paragraph (2);
(4) Entering into any agreement with a depository institution for the purpose of receiving funds from a service member whereby the depository institution, with or
without compensation, agrees to accept direct deposits from a service member with whom it has no formal banking relationship;
(5) Using DoD personnel, directly or indirectly, as a representative or agent in any official or unofficial capacity with or without compensation with respect to the solicitation or sale of life insurance to service members who are junior in rank or grade, or to the family member of those service members;
(6) Offering or giving anything of value, directly or indirectly, to DoD personnel to procure their assistance in encouraging, assisting or facilitating the solicitation or sale of life insurance to another service member;
(7) Knowingly offering or giving anything of value to a service member with a pay grade of $\mathrm{E}-4$ or below for his or her attendance to any event where an application for life insurance is solicited; or
(8) Advising a service member with a pay grade of $\mathrm{E}-4$ or below to change his or her income tax withholding or state of legal residence for the sole purpose of increasing disposable income to purchase life insurance.
(b) The following acts or practices by an insurer or insurance producer lead to confusion regarding source, sponsorship, approval, or affiliation and are declared to be false, misleading, deceptive, or unfair. They include, but are not limited to:
(1) Making any representation, or using any device, title, descriptive name, or identifier that has the tendency or capacity to confuse or mislead a service member into believing that the insurer, insurance producer, or product offered is affiliated, connected, or associated with, endorsed, sponsored, sanctioned, or recommended by the

United States government, the United States Armed Forces, or any state or federal agency or government entity. Examples of prohibited insurance producer titles include, but are not limited to, "Battalion Insurance Counselor", "Unit Insurance Advisor", "Servicemen's Group Life Insurance Conversion Consultant" or "Veteran's Benefits Counselor".
Nothing herein shall be construed to prohibit a person from using a professional designation awarded after the successful completion of a course of instruction in the business of insurance by an accredited institution of higher learning. These designations include, but are not limited to, Chartered Life Underwriter ("CLU"), Chartered Financial Consultant ("ChFC"), Certified Financial Planner ("CFP"), Master of Science in Financial Services ("MSFS"), or Masters of Science Financial Planning ("MS"); or
(2) Soliciting the purchase of any life insurance product through the use of or in conjunction with any third-party organization that promotes the welfare of or assists members of the United States Armed Forces in a manner that has the tendency or capacity to confuse or mislead a service member into believing that either the insurer, insurance producer, or insurance product is affiliated, connected, or associated with, endorsed, sponsored, sanctioned, or recommended by the United States government, or the United States Armed Forces.
(c) The following acts or practices by an insurer or insurance producer lead to confusion regarding premiums, costs, or investment returns and are declared to be false, misleading, deceptive, or unfair. They include, but are not limited to:
(1) Using or describing the credited interest rate on a life insurance policy in a manner that implies that the credited interest rate is a net return on premium paid; or
(2) Excluding individually issued annuities, misrepresenting the mortality costs of a life insurance product, including stating or implying that the product "costs nothing" or is "free".
(d) The following acts or practices by an insurer or insurance producer regarding SGLI or VGLI are declared to be false, misleading, deceptive, or unfair. They include, but are not limited to:
(1) Making any representation regarding the availability, suitability, amount, cost exclusions or limitations to coverage provided to a service member or dependents by SGLI or VGLI, which is false, misleading, deceptive, or unfair;
(2) Making any representation regarding conversion requirements, including the costs of coverage, or exclusions or limitations to coverage of SGLI or VGLI to private insurers which is false, misleading, deceptive, or unfair; or
(3) Suggesting, recommending, or encouraging a service member to cancel or terminate his or her SGLI policy or issuing a life insurance policy which replaces an existing SGLI policy, unless the replacement shall take effect upon or after the service member's separation from the United States Armed Forces.
(e) The following acts or practices by an insurer or insurance producer regarding disclosure are declared to be false, misleading, deceptive, or unfair. They include, but are not limited to:
(1) Deploying, using, or contracting for any lead generating materials designed exclusively for use with service members that do not clearly and conspicuously disclose that the recipient will be
contacted by an insurer or insurance producer, if that is the case, for the purpose of soliciting the purchase of life insurance;
(2) Failing to disclose that a solicitation for the sale of life insurance will be made when establishing a specific appointment for an in-person, face-to-face meeting with a prospective purchaser;
(3) Excluding individually issued annuities, failing to clearly and conspicuously disclose the fact that the product being sold is life insurance;
(4) Failing to make, at the time of sale or offer to individual known to be a service member, the written disclosures required by section 10 of the "Military Personnel Financial Services Protection Act", Pub. L. No. 109-290, at 1323-1324; or
(5) Excluding individually issued annuities, when the sale is conducted in-person, face-to-face with an individual known to be a service member, failing to provide to the applicant at the time the application is taken:
(A) An explanation of any free-look period with instructions on how to cancel if a policy is issued; and
(B) Either a copy of the application or a written disclosure. The copy of the application or the written disclosure shall clearly and concisely set out the type of life insurance, the death benefit applied for, and its expected first year cost. A basic illustration that meets the requirements of chapter 431, article 10D, part IV, HRS, shall be deemed sufficient to meet this requirement for a written disclosure.
(f) The following acts or practices by an insurer or insurance producer with respect to the sale of certain life insurance products are declared to be
false, misleading, deceptive, or unfair. They include, but are not limited to:
(1) Excluding individually issued annuities, recommending the purchase of any life insurance product which includes a side fund to a service member in pay grades E-4 and below, unless the insurer has reasonable grounds for believing that the life insurance death benefit, standing alone, is suitable;
(2) Offering for sale or selling a life insurance product which includes a side fund to a service member in pay grades E-4 and below, who is currently enrolled in SGLI, is presumed unsuitable, unless, after the completion of a needs assessment, the insurer demonstrates that the applicant's SGLI death benefit, together with any other military survivor benefits, savings and investments, survivor income, and other life insurance are insufficient to meet the applicant's insurable needs for life insurance. For the purposes of this paragraph:
(A) "Insurable needs" are the risks associated with premature death, taking into consideration the financial obligations and immediate and future cash needs of the applicant's estate, survivors or dependents; and
(B) "Other military survivor benefits" include, but are not limited to: the death gratuity, funeral reimbursement, transition assistance, survivor and dependents' educational assistance, dependency and indemnity compensation, TRICARE healthcare benefits, survivor housing benefits and allowances, federal income tax forgiveness, and social security survivor benefits;
(3) Excluding individually issued annuities, offering for sale or selling any life
insurance contract which includes a side fund:
(A)

Unless interest credited accrues from the date of deposit to the date of withdrawal and permits withdrawals without limit or penalty;
(B) Unless the applicant has been provided with a schedule of effective rates of return based upon cash flows of the combined product. For this disclosure, the effective rate of return will consider all premiums and cash contributions made by the policyholder and all cash accumulations and cash surrender values available to the policyholder in addition to life insurance coverage. This schedule will be provided for at least each policy year from one to ten and for every fifth policy year thereafter ending at age one hundred, policy maturity, or final expiration; and
(C) Which by default diverts or transfers funds accumulated in the side fund to pay, reduce, or offset any premiums due;
Excluding individually issued annuities, offering for sale or selling any life insurance contract which, after considering all policy benefits, including but not limited to endowment, return of premium, or persistency, does not comply with standard nonforfeiture law for life insurance; or
(5) Selling any life insurance product to an individual known to be a service member that excludes coverage if the insured's death is related to war, declared or undeclared, or any act related to military service except for an accidental death coverage, for example, double indemnity, which may be excluded. (Eff 03/28/08; comp 1/22/10; comp 12/13/12; am and comp 02/02/17; comp
] (Auth: HRS §§431:2-201;
431:2-201.8) (Imp: HRS $\$ 431: 1-201.8)$

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$16-171-606 Severability. If any provision of
these sections or the application thereof to any
person or circumstance is held invalid for any reason,
the invalidity shall not affect the other provisions
or any other application of these sections, which can
be given effect without the invalid provisions or
application. To this end, all provisions of these
sections are declared to be severable. [Eff 03/28/08;
comp 1/22/10; comp 12/13/12; am and comp 02/02/17;
comp ] (Auth: HRS §$431:2-201; 431:2-
201.8) (Imp: HRS $431:1-201.8)
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SUBCHAPTER 7 (Reserved)
SUBCHAPTER 8-REPEALED
§16-171-801 Repealed. [R 12/13/12]
§16-171-802 Repealed. [R 12/13/12]
§16-171-803 Repealed. [R 12/13/12]
§16-171-804 Repealed. [R 12/13/12]

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$16-171-805 Repealed. [R 12/13/12]
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§16-171-806 Repealed. [R 12/13/12]
§16-171-807 Repealed. [R 12/13/12]
§16-171-808 Repealed. [R 12/13/12]

## SUBCHAPTER 9

VALUATION OF LIFE INSURANCE POLICIES
§16-171-901 Purpose. (a) The purpose of this subchapter is to provide:
(1) Tables of select mortality factors and rules for their use;
(2) Rules concerning a minimum standard for the valuation of plans with nonlevel premiums or benefits; and
(3) Rules concerning a minimum standard for the valuation of plans with secondary guarantees.
(b) The method for calculating basic reserves defined in this subchapter will constitute the commissioner's reserve valuation method for policies to which this subchapter is applicable. [Eff and comp 02/02/17; comp ] (Auth: HRS §§431:5401, 432:2-201) (Imp: HRS §431:5-307)
§16-171-902 Applicability. (a) This subchapter shall apply to all life insurance policies, with or without nonforfeiture values, and subject to the exceptions and conditions set forth in subsections (b) and (c).
(b) Exceptions:
(1) This subchapter shall not apply to any individual life insurance policy issued on or after the effective date of this regulation if the policy is issued in accordance with, and as a result of, the exercise of a reentry provision contained in the original life insurance policy of the same or greater face amount, issued before the effective date of this subchapter, that guarantees the premium rates of the new policy. This subchapter also shall not apply to subsequent policies issued as a result of the exercise of such a provision, or a derivation of the provision, in the new policy;
(2) This subchapter shall not apply to any universal life policy that meets all of the following requirements:
(A) The universal life policy has a secondary guarantee period, if any, that is five years or less;
(B) The specified premium for the secondary guarantee period is not less than the net level reserve premium for the secondary guarantee period based on the CSO valuation tables as defined in section 16-171-903, and the applicable valuation interest rate; and
(C) The initial surrender charge is not less than one hundred per cent of the first year annualized specified premium for the secondary guarantee period.
(3) This subchapter shall not apply to any variable life insurance policy or universal life insurance policy that provides for life
insurance and the amount or duration of which varies according to the investment experience of any separate account or accounts;
(4) This subchapter shall not apply to a group life insurance certificate unless the certificate provides for a stated or implied schedule of maximum gross premiums required in order to continue coverage in force for a period in excess of one year.
(c) Conditions:
(1) Calculation of the minimum valuation standard for policies other than universal life policies with guaranteed nonlevel gross premiums, guaranteed nonlevel benefits, or both, shall be in accordance with the provisions of section 16-171-905.
(2) Calculation of the minimum valuation standard for flexible premium and fixed premium universal life insurance policies, which contain provisions resulting in the ability of a policyholder to keep a policy in force over a secondary guarantee period, shall be in accordance with the provisions of section 16-171-906. [Eff and comp 02/02/17; comp ] (Auth: HRS §§431:5-401, 432:2-201) (Imp: HRS §431:5307)
§16-171-903 Definitions. For purposes of this subchapter:
"1980 CSO valuation tables" means the Commissioners' 1980 Standard Ordinary Mortality Table ("1980 CSO Table") without ten-year selection factors, incorporated into the 1980 amendments to the NAIC Standard Valuation Law, and variations of the 1980 CSO Table approved by the NAIC, such as the smoker and nonsmoker versions approved in December 1983.
"Basic reserves" means reserves calculated in accordance with subsection 431:5-307(h), HRS.
"Contract segmentation method" means the method of dividing the period from issuance to mandatory expiration of a policy into successive segments, with the length of each segment being defined as the period from the end of the prior segment (from policy inception for the first segment) to the end of the latest policy year as described in this definition. All calculations are made using the 1980 CSO valuation tables, as defined in this section, or any other valuation mortality table adopted by the NAIC for this purpose and, if elected, the optional minimum mortality standard for deficiency reserves stipulated in section 16-171-904 (b).

The length of a particular contract segment shall be set equal to the minimum of the value $t$ for which $G_{t}$ is greater than $R_{t}$ (if $G_{t}$ never exceeds $R_{t}$, the segment length is deemed to be the number of years from the beginning of the segment to the mandatory expiration date of the policy), where $\mathrm{Gt}_{\mathrm{t}}$ and $\mathrm{Rt}_{\mathrm{t}}$ are defined as follows:

$$
\begin{aligned}
& G_{t}=\frac{G P_{x+k+t}}{G P_{x+k+t-1}} \\
& \text { where: } \\
& \mathrm{x}=\text { original issue age; } \\
& k=\text { the number of years from the date of } \\
& \text { issue to the beginning of the segment; } \\
& t=1,2, \ldots ; t \text { is reset to } 1 \text { at the } \\
& \text { beginning of each segment; } \\
& \mathrm{GP}_{\mathrm{x}+\mathrm{k}+\mathrm{t}-1}=\text { Guaranteed gross premium per thousand } \\
& \text { of face amount for year } t \text { of the } \\
& \text { segment, ignoring policy fees only if } \\
& \text { level for the premium paying period of } \\
& \text { the policy. } \\
& q_{x+k+t} \\
& R_{t}=\Psi_{q_{x+k+t-1}}, \\
& \text { However, } R_{t} \text { may be } \\
& \text { increased or decreased } \\
& \text { by one per cent in any } \\
& \text { policy year at the }
\end{aligned}
$$

company's option, but $R_{t}$ shall not be less than one;
where:

$$
\begin{array}{ll}
x, k \text { and } t \text { are as defined above; and } \\
q_{x+k+t-1}= & \text { valuation mortality rate for } \\
& \text { deficiency reserves in policy year } \\
& k+t \text { but using the mortality of } \\
& \text { paragraph } 16-171-904(b)(2), \text { if } \\
& \text { section } 16-171-904(b)(3), \text { is } \\
& \text { elected for deficiency reserves. }
\end{array}
$$

However, if $G P_{x+k+t}$ is greater than 0 and $G P_{x+k+t-1}$ is equal to 0 , $G t$ shall be deemed to be 1000. If $G_{x+k+t}$ and $G P_{x+k+t-1}$ are both equal to $0, G_{t}$ shall be deemed to be 0 .
"Deficiency reserves" means the excess, if greater than zero, of minimum reserves over basic reserves.
"Guaranteed gross premiums" means the premiums under a policy of life insurance that are guaranteed and determined at issue.
"Maximum valuation interest rates" means the interest rates defined in subsection 431:5-307(g), HRS, that are to be used in determining the minimum standard for the valuation of life insurance policies.
"Minimum reserves" means reserves calculated in accordance with subsection 431:5-307(e), HRS.
"Scheduled gross premium" means the smallest illustrated gross premium at issue for other than universal life insurance policies. For universal life insurance policies, scheduled gross premium means the smallest specified premium described in paragraph 16-171-906(a) (3), if any, or else the minimum premium described in paragraph 16-171-906(a) (4).
"Segmented reserves" means reserves calculated using segments produced by the contract segmentation method equal to the present value of all future guaranteed benefits less the present value of all future net premiums to the mandatory expiration of a policy, where the net premiums within each segment are
a uniform percentage of the respective guaranteed gross premiums within the segment. The uniform percentage for each segment is such that at the beginning of the segment, the present value of the net premiums within the segment equals:
(1) The present value of the death benefits within the segment, plus;
(2) The present value of any unusual guaranteed cash value (see subsection 16-171-905(d)) occurring at the end of the segment, less;
(3) Any unusual guaranteed cash value occurring at the start of the segment, plus;
(4) For the first segment only, the excess of (A) over (B), as follows:
(A)

A net level annual premium equal to the present value, at the date of issue, of the benefits provided for in the first segment after the first policy year, divided by the present value, at the date of issue, of an annuity of one per year payable on the first and each subsequent anniversary within the first segment on which a premium falls due. However, the net level annual premium shall not exceed the net level annual premium on the nineteen-year premium whole life plan of insurance of the same renewal year equivalent level amount at an age one year higher than the age at issue of the policy;
(B) A net one year term premium for the benefits provided for in the first policy year.
The length of each segment is determined by the "contract segmentation method," as defined in this section. The interest rates used in the present value calculations for any policy may not exceed the maximum valuation interest rate, determined with a guarantee duration equal to the sum of the lengths of all segments of the policy. For both basic reserves and deficiency reserves computed by the segmented method,
present values shall include future benefits and net premiums in the current segment and in all subsequent segments.
"Tabular cost of insurance" means the net single premium at the beginning of a policy year for one-year term insurance in the amount of the guaranteed death benefit in that policy year.
"Ten-year select factors" means the select factors adopted with the 1980 amendments to the NAIC Standard Valuation Law.
"Unitary reserves" means the present value of all future guaranteed benefits less the present value of all future modified net premiums, where:
(1) Guaranteed benefits and modified net premiums are considered to the mandatory expiration of the policy; and
(2) Modified net premiums are a uniform percentage of the respective guaranteed gross premiums, where the uniform percentage is such that, at issue, the present value of the net premiums equals the present value of all death benefits and pure endowments, plus the excess of (A) over (B), as follows:
(A) A net level annual premium equal to the present value, at the date of issue, of the benefits provided for after the first policy year, divided by the present value, at the date of issue, of an annuity of one per year payable on the first and each subsequent anniversary of the policy on which a premium falls due. The net level annual premium, however, shall not exceed the net level annual premium on the nineteen-year premium whole life plan of insurance of the same renewal year equivalent level amount at an age one year higher than the age at issue of the policy; and
(B) A net one year term premium for the benefits provided for in the first policy year.

The interest rates used in the present value calculations for any policy may not exceed the maximum valuation interest rate, determined with a guarantee duration equal to the length from issue to the mandatory expiration of the policy.
"Universal life insurance policy" means any individual life insurance policy under the provisions of which separately identified interest credits (other than in connection with dividend accumulations, premium deposit funds, or other supplementary accounts) and mortality or expense charges are made to the policy. [Eff and comp 02/02/17; comp
] (Auth: HRS §§431:5-401, 432:2-201)
(Imp: HRS $\$ 431: 5-307$ )
§16-171-904 General calculation requirements for basic reserves and premium deficiency reserves. (a) At the election of the company for any one or more specified plans of life insurance, the minimum mortality standard for basic reserves may be calculated using the 1980 CSO valuation tables with select mortality factors, or any other valuation mortality table adopted by the NAIC. If select mortality factors are elected, they may be:
(1) The ten-year select mortality factors incorporated into the 1980 amendments to the NAIC Standard Valuation Law;
(2) The select mortality factors in the Appendix A entitled "Select Mortality Factors" dated October 2009, located at the end of this chapter; or
(3) Any other table of select mortality factors adopted by the NAIC for the purpose of calculating basic reserves.
(b) Deficiency reserves, if any, are calculated for each policy as the excess, if greater than zero, of the quantity A over the basic reserve. The quantity $A$ is obtained by recalculating the basic reserve for the policy using guaranteed gross premiums instead of net premiums when the guaranteed gross
premiums are less than the corresponding net premiums. At the election of the company for any one or more specified plans of insurance, the quantity $A$ and the corresponding net premiums used in the determination of quantity A may be based upon the 1980 CSO valuation tables with select mortality factors, or any other valuation mortality table adopted by the NAIC. If select mortality factors are elected, they may be:
(1) The ten-year select mortality factors incorporated into the 1980 amendments to the NAIC Standard Valuation Law;
(2) The select mortality factors in the Appendix A of this regulation;
(3) For durations in the first segment, X per cent of the select mortality factors in the Appendix A, subject to the following:
(A) $X$ may vary by policy year, policy form, underwriting classification, issue age, or any other policy factor expected to affect mortality experience;
(B) X is such that, when using the valuation interest rate used for basic reserves, (i) is greater than or equal to (ii) below:
(i) The actuarial present value of future death benefits, calculated using the mortality rates resulting from the application of $X$; and (ii) The actuarial present value of future death benefits calculated using anticipated mortality experience without recognition of mortality improvement beyond the valuation date;
(C) $X$ is such that the mortality rates resulting from the application of $X$ are at least as great as the anticipated mortality experience, without recognition of mortality improvement beyond the valuation date, in each of

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        the first five years after the
        valuation date;
(D) The appointed actuary shall increase X
        at any valuation date where it is
        necessary to continue to meet all the
        requirements of this paragraph;
(E) The appointed actuary may decrease X at
        any valuation date as long as X
        continues to meet all the requirements
        of this paragraph;
(F) The appointed actuary shall
        specifically take into account the
        adverse effect on expected mortality
        and lapse of any anticipated or actual
        increase in gross premiums;
(G) If X is less than one hundred per cent
        at any duration for any policy, the
        following requirements shall be met:
        (i) The appointed actuary shall
        annually prepare an actuarial
        opinion and a memorandum for the
        company in accordance with the
        requirements of section 16-169-
        2;
        The appointed actuary shall
        disclose in the Regulatory Asset
        Adequacy Issues Summary the
        impact of the insufficiency of
        assets to support the payment of
        benefits and expenses and the
        establishment of statutory
        reserves during one or more
        interim periods; and
(iii) The appointed actuary shall
        annually opine for all policies
        subject to this subchapter as to
        whether the mortality rates
        resulting from the application
        of X meet the requirements of
        this paragraph. This opinion
        shall be supported by an
        actuarial report, subject to
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appropriate Actuarial Standards of Practice promulgated by the Actuarial Standards Board of the American Academy of Actuaries. The $X$ factors shall reflect anticipated future mortality, without recognition of mortality improvement beyond the valuation date, and take into account relevant emerging experience; or
(4) Any other table of select mortality factors adopted by the NAIC for the purpose of calculating deficiency reserves.
(c) This subsection applies to both basic reserves and deficiency reserves. Any set of select mortality factors may be used only for the first segment. If the first segment is less than ten years, however, the appropriate ten-year select mortality factors incorporated into the 1980 amendments to the NAIC Standard Valuation Law may be used thereafter through the tenth policy year from the date of issue. In addition, for policies that have reentry provisions, select mortality factors shall not be used in segments beginning after reentry unless a new policy is actually issued.
(d) In determining basic reserves or deficiency reserves, guaranteed gross premiums without policy fees may be used where the calculation involves the guaranteed gross premium, but only if the policy fee is a level dollar amount after the first policy year. In determining deficiency reserves, policy fees may be included in guaranteed gross premiums, even if not included in the actual calculation of basic reserves.
(e) Reserves for policies that have changes to guaranteed gross premiums, guaranteed benefits, guaranteed charges, or guaranteed credits that are unilaterally made by the insurer after issue and that are effective for more than one year after the date of the change shall be the greatest of the following:
(1) Reserves calculated ignoring the guarantee;
(2) Reserves assuming the guarantee was made at issue; or
(3) Reserves assuming that the policy was issued on the date of the guarantee.
(f) The commissioner may require that the company document the extent of the adequacy of reserves for specified blocks, including, but not limited to, policies issued prior to the effective date of this subchapter. This documentation may include a demonstration of the extent to which aggregation with other non-specified blocks of business is relied upon in the formation of the appointed actuary opinion pursuant to and consistent with the requirements of section 16-169-2. [Eff and comp 02/02/17; comp ] (Auth: HRS §§431:5-401, 432:2-201) (Imp: HRS §431:5-307)
§16-171-905 Calculation of minimum valuation standard for policies, other than universal life policies, with guaranteed nonlevel gross premiums or guaranteed nonlevel benefits. (a) Basic reserves shall be calculated as the greater of the segmented reserves and the unitary reserves. Both the segmented reserves and the unitary reserves for any policy shall use the same valuation mortality table and selection factors. At the option of the insurer, in calculating segmented reserves and net premiums, the following adjustments may be made:
(1) Treat the unitary reserve, if greater than zero, applicable at the end of each segment as a pure endowment, and subtract the unitary reserve, if greater than zero, applicable at the beginning of each segment from the present value of guaranteed life insurance and endowment benefits for each segment; or
(2) Treat the guaranteed cash surrender value, if greater than zero, applicable at the end of each segment as a pure endowment, and subtract the guaranteed cash surrender value, if greater than zero, applicable at the beginning of each segment from the
present value of guaranteed life insurance and endowment benefits for each segment.
(b) Deficiency reserves.
(1) The deficiency reserve at any duration shall be calculated:
(A) On a unitary basis if the corresponding basic reserve determined by subsection (a) is unitary;
(B) On a segmented basis if the corresponding basic reserve determined by subsection (a) is segmented; or
(C) On a segmented basis if the corresponding basic reserve determined by subsection (a) is equal to both the segmented reserve and the unitary reserve.
(2) This subsection shall apply to any policy for which the guaranteed gross premium at any duration is less than the corresponding modified net premium calculated by the method used in determining the basic reserves, but using the minimum valuation standards of mortality as specified in section 16-171-904(b), and rate of interest.
(3) For the current and all remaining periods, deficiency reserves, if any, shall be calculated for each policy as the excess, if greater than zero, of the quantity A over the basic reserve, where A is obtained as indicated in section 16-171-904(b).
(4) For deficiency reserves determined on a segmented basis, the quantity A is determined using segment lengths equal to those determined for segmented basic reserves.
(c) If mean reserves are used, the minimum value of basic reserves may not be less than the tabular cost of insurance for the balance of the policy year. If mid-terminal reserves are used, basic reserves may not be less than the tabular cost of insurance for the balance of the current modal period or to the paid-todate, if later, but not beyond the next policy
anniversary. The tabular cost of insurance shall use the same valuation mortality table and interest rates as that used for the calculation of the segmented reserves. If select mortality factors are used, however, they shall be the ten-year select factors incorporated into the 1980 amendments of the NAIC Standard Valuation Law. In no case may total reserves, including basic reserves, deficiency reserves, and any reserves held for supplemental benefits that would expire upon contract termination, exclusive of any deduction for policy loans upon termination of the policy, be less than the amount that the policyowner would receive, including the cash surrender value of the supplemental benefits, if any, referred to in subsection (a) (2).
(d) Unusual pattern of guaranteed cash surrender values. The requirements of this subsection are independent of both the segmentation and the unitary process.
(1) For any policy with an unusual pattern of guaranteed cash surrender values, the reserves actually held prior to the first unusual guaranteed cash surrender value shall not be less than the reserves calculated by treating the first unusual guaranteed cash surrender value as a pure endowment and treating the policy as an $n$ year policy providing term insurance plus a pure endowment equal to the unusual cash surrender value, where $n$ is the number of years from the date of issue to the date the unusual cash surrender value is scheduled.
(2) The reserves actually held subsequent to any unusual guaranteed cash surrender value shall not be less than the reserves calculated by treating the policy as an $n$ year policy providing term insurance plus a pure endowment equal to the next unusual guaranteed cash surrender value, and treating any unusual guaranteed cash surrender value at the end of the prior segment as a net single premium, where:
(A) $n$ is the number of years from the date of the last unusual guaranteed cash surrender value prior to the valuation date to the earlier of:
(i) The date of the next unusual guaranteed cash surrender value, if any, that is scheduled after the valuation date; or
(ii) The mandatory expiration date of the policy;
(B) The net premium for a given year during the $n$ year period is equal to the product of the net to gross ratio and the respective gross premium; and
(C) The net to gross ratio is equal to (i) divided by (ii) as follows:
(i) The present value, at the beginning of the $n$ year period, of death benefits payable during the $n$ year period plus the present value, at the beginning of the $n$ year period, of the next unusual guaranteed cash surrender value, if any, minus the amount of the last unusual guaranteed cash surrender value, if any, scheduled at the beginning of the $n$ year period;
(ii) The present value, at the beginning of the $n$ year period, of the scheduled gross premiums payable during the $n$ year period.
(3) For purposes of this subsection, a policy is considered to have an unusual pattern of guaranteed cash surrender values if any future guaranteed cash surrender value exceeds the prior year's guaranteed cash surrender value by more than the sum of: (A) One hundred ten per cent of the scheduled gross premium for that year;
(B) One hundred ten per cent of one year's accrued interest on the sum of the prior year's guaranteed cash surrender value and the scheduled gross premium using the nonforfeiture interest rate used for calculating policy guaranteed cash surrender values; and
(C) Five per cent of the first policy year surrender charge, if any.
(e) Optional exemption for yearly renewable term ("YRT") reinsurance. At the option of the company, the following approach for reserves on YRT reinsurance may be used:
(1) Calculate the valuation net premium for each future policy year as the tabular cost of insurance for that future year;
(2) Basic reserves shall never be less than the tabular cost of insurance for the appropriate period, as defined in subsection (c) ; or
(3) Deficiency reserves.
(A) For each policy year, calculate the excess, if greater than zero, of the valuation net premium over the respective maximum guaranteed gross premium.
(B) Deficiency reserves shall never be less than the sum of the present values, at the date of valuation, of the excesses determined in accordance with subparagraph (A).
(4) For purposes of this subsection, the calculations use the maximum valuation interest rate and the 1980 CSO mortality tables with or without ten-year select mortality factors, or any other table adopted.
(5) A reinsurance agreement shall be considered YRT reinsurance for purposes of this subsection if only the mortality risk is reinsured.
(6) If the assuming company chooses this optional exemption, the ceding company's reinsurance reserve credit shall be limited to the amount of reserve held by the assuming company for the affected policies.
(f) Optional exemption for attained-age-based YRT life insurance policies. At the option of the company, the following approach for reserves for attained-age-based YRT life insurance policies may be used:
(1) Calculate the valuation net premium for each future policy year as the tabular cost of insurance for that future year;
(2) Basic reserves shall never be less than the tabular cost of insurance for the appropriate period, as defined in subsection (c); or
(3) Deficiency reserves.
(A) For each policy year, calculate the excess, if greater than zero, of the valuation net premium over the respective maximum guaranteed gross premium.
(B) Deficiency reserves shall never be less than the sum of the present values, at the date of valuation, of the excesses determined in accordance with subparagraph (A).
(4) For purposes of this subsection, the calculations use the maximum valuation interest rate and the 1980 CSO valuation tables with or without ten-year select mortality factors, or any other table adopted.
(5) A policy shall be considered an attained-age-based YRT life insurance policy for purposes of this subsection if:
(A) The premium rates on both the initial current premium scale and the guaranteed maximum premium scale are based upon the attained age of the insured, such that the rate for any
given policy at a given attained age of the insured is independent of the year the policy was issued; and
(B) The premium rates on both the initial current premium scale and the guaranteed maximum premium scale are the same as the premium rates for policies covering all insureds of the same sex, risk class, plan of insurance, and attained age.
(6) For policies that become attained-age-based YRT policies after an initial period of coverage, the approach of this subsection may be used after the initial period if:
(A) The initial period is constant for all insureds of the same sex, risk class, and plan of insurance; or
(B) The initial period runs to a common attained age for all insureds of the same sex, risk class, and plan of insurance; and
(C) After the initial period of coverage, the policy meets the conditions of paragraph (5).
(7) If this election is made, this approach shall be applied in determining reserves for all attained-age-based YRT life insurance policies issued on or after the effective date of this regulation.
(g) Exemption from unitary reserves for certain n-year renewable term life insurance polices. Unitary basic reserves and unitary deficiency reserves need not be calculated for a policy if the following conditions are met:
(1) The policy consists of a series of $n$-year periods, including the first period and all renewal periods, where $n$ is the same for each period, except that for the final renewal period, $n$ may be truncated or extended to reach the expiry age, provided that this final renewal period is less than ten years and less than twice the size of
the earlier $n$-year periods, and for each period, the premium rates on both the initial current premium scale and the guaranteed maximum premium scale are level;
(2) The guaranteed gross premiums in all n-year periods are not less than the corresponding net premiums based upon the 1980 CSO Table, with or without the ten-year select mortality factors; and
(3) There are no cash surrender values in any policy year.
(h) Exemption from unitary reserves for certain juvenile policies. Unitary basic reserves and unitary deficiency reserves need not be calculated for a policy if the following conditions are met, based upon the initial current premium scale at issue:
(1) The insured at issue is age twenty-four or younger;
(2) Until the insured reaches the end of the juvenile period, which shall occur at or before age twenty-five, the gross premiums and death benefits are level and there are no cash surrender values; and
(3) After the end of the juvenile period, gross premiums are level for the remainder of the premium paying period and death benefits are level for the remainder of the life of the policy. [Eff and comp 02/02/17; comp
] (Auth: HRS §§431:5-401, 432:2-201) (Imp: HRS §431:5-307)
§16-171-906 Calculation of minimum valuation standard for flexible premium and fixed premium universal life insurance policies that contain provisions resulting in the ability of a policyowner to keep a policy in force over a secondary guarantee period. (a) General.
(1) Policies with a secondary guarantee include:
(A) A policy with a guarantee that the policy will remain in force at the
original schedule of benefits, subject only to the payment of specified premiums;
(B) A policy in which the minimum premium at any duration is less than the corresponding one-year valuation premium, calculated using the maximum valuation interest rate and the 1980 CSO valuation tables, with or without ten-year select mortality factors, or any other table adopted; or
(C) A policy with any combination of subparagraphs (A) and (B).
(2) A secondary guarantee period is the period for which the policy is guaranteed to remain in force subject only to a secondary guarantee. When a policy contains more than one secondary guarantee, the minimum reserve shall be the greatest of the respective minimum reserves at that valuation date of each unexpired secondary guarantee, ignoring all other secondary guarantees. Secondary guarantees that are unilaterally changed by the insurer after issue shall be considered to have been made at issue. Reserves described in subsections (b) and (c) shall be recalculated from issue to reflect these changes.
(3) Specified premiums mean the premiums specified in the policy, the payment of which guarantees that the policy will remain in force at the original schedule of benefits, but which otherwise would be insufficient to keep the policy in force in the absence of the guarantee if maximum mortality and expense charges and minimum interest credits were made and any applicable surrender charges were assessed.
(4) For purposes of this section, the minimum premium for any policy year is the premium that, when paid into a policy with a zero account value at the beginning of the policy
year, produces a zero account value at the end of the policy year. The minimum premium calculation shall use the policy cost factors, including mortality charges, loads, and expense charges, and the interest crediting rate, which are all guaranteed at issue.
(5) The one-year valuation premium means the net one-year premium based upon the original schedule of benefits for a given policy year. The one-year valuation premiums for all policy years are calculated at issue. The select mortality factors defined in section 16-171-904(b)(2), (3), and (4), HAR, may not be used to calculate the one-year valuation premiums.
(6) The one-year valuation premium should reflect the frequency of fund processing, as well as the distribution of deaths assumption employed in the calculation of the monthly mortality charges to the fund.
(b) Basic reserves for the secondary guarantees. Basic reserves for the secondary guarantees shall be the segmented reserves for the secondary guarantee period. In calculating the segments and the segmented reserves, the gross premiums shall be set equal to the specified premiums, if any, or otherwise to the minimum premiums, that keep the policy in force. The segments will be determined according to the contract segmentation method as defined in section 16-171903 (b) .
(c) Deficiency reserves for the secondary guarantees. Deficiency reserves, if any, for the secondary guarantees shall be calculated for the secondary guarantee period in the same manner as described in section 16-171-905(b), with gross premiums set equal to the specified premiums, if any, or otherwise to the minimum premiums that keep the policy in force.
(d) Minimum reserves. The minimum reserves during the secondary guarantee period are the greater of:
(1) The basic reserves for the secondary guarantee plus the deficiency reserve, if any, for the secondary guarantees; or
(2) The minimum reserves required by other rules or regulations governing universal life plans." [Eff and comp 02/02/17; comp ] (Auth: HRS §§431:5-401, 432:2-201) (Imp: HRS §431:5-307)
2. Material, except source notes and other notes, to be repealed is bracketed and stricken. New material is underscored.
3. Additions to update source notes and other notes to reflect these amendments and compilation are not underscored.
4. These amendments to and compilation of chapter 16-171, Hawaii Administrative Rules, shall take effect on January 1, 2022; provided that if the commissioner determines that the insurance division is unable to implement this rule by January 1, 2022, the insurance division may delay implementation, but in no event shall the delay be in force beyond December 31, 2022.

I certify that the foregoing are copies of the rules, drafted in the Ramseyer format pursuant to the requirements of section 91-4.1, Hawaii Revised Statutes, which were adopted on MM DD, YYYY, and filed with the Office of the Lieutenant Governor.

CATHERINE P. AWAKUNI COLÓN
Director of Commerce and
Consumer Affairs

APPROVED AS TO FORM:

Deputy Attorney General

APPENDIX A: SELECT MORTALITY FACTORS

This appendix contains tables of select mortality factors that are the bases to which the respective percentage of paragraphs 16-171-904(a)(2), (b) (2) and (b) (3) are applied.

The six tables of select mortality factors contained herein include: Table 1 - male aggregate; Table 2 - male nonsmoker; Table 3 - male smoker; Table 4 - female aggregate; Table 5-female nonsmoker; and Table 6 female smoker.

These tables apply to both age last birthday and age nearest birthday mortality tables.

For sex-blended mortality tables, compute select mortality factors in the same proportion as the underlying mortality. For example, for the 1980 CSO-B Table, the calculated select mortality factors are eighty per cent of the appropriate male table in this appendix, plus twenty per cent of the appropriate female table in this appendix.
Effective：October 2009

| 00I | ¢6 | I6 | 98 | 28 | L | 9 | SL | IL | 89 | 89 | 99 | ¢9 | ¢9 | £9 | 29 | 85 | \＆s | 0t | ＋$\varepsilon$ | $0{ }^{0}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 00I | ¢6 | 06 | 98 | 18 | 92 | 9 | tL | IL | 69 | 89 | 99 | ¢9 | ¢9 | £9 | 29 | 85 | \＆s | It | Lع | $6 \varepsilon$ |
| 00I | ¢6 | 16 | 98 | 28 | LL | 9 | SL | $\varepsilon L$ | 69 | 69 | L9 | 99 | ¢9 | z9 | 19 | 85 | \＆s | to | Lع | $8 \varepsilon$ |
| 001 | ¢6 | 06 | 98 | 18 | 92 | 9 | tL | IL | 0 | 89 | L9 | ¢9 | $\varepsilon 9$ | z9 | 19 | LS | 95 | st | $8 \varepsilon$ | $\llcorner\varepsilon$ |
| 001 | ¢6 | 16 | 98 | 28 | LL | 9 | tL | UL | $0 L$ | 89 | L9 | ¢9 | $\varepsilon 9$ | 19 | 65 | 09 | 95 | 2t | $8 \varepsilon$ | $9 \varepsilon$ |
| 00I | ¢6 | 06 | 98 | 18 | 92 | 9 | tL | EL | IL | 89 | L9 | ¢9 | 29 | 19 | £9 | 09 | 95 | Lt | 0t | s£ |
| 001 | ¢6 | 06 | 98 | 18 | 92 | $\varsigma \iota$ | $\varepsilon L$ | IL | 0 | $\angle 9$ | 99 | £9 | 19 | £9 | 29 | 09 | 95 | Lt | てt | เ£ |
| 001 | ¢6 | 06 | ¢8 | 08 | SL | $\varepsilon L$ | IL | $0 L$ | $\llcorner 9$ | 99 | ¢9 | 29 | t9 | £9 | 29 | 65 | 95 | $6{ }^{6}$ | \＆t | £ |
| 001 | ¢6 | 68 | ＋8 | $8 L$ | \＆ | zL | 0 | $\llcorner 9$ | 99 | £9 | z9 | 99 | £9 | z9 | 09 | 65 | 95 | $6{ }^{6}$ | $9 \downarrow$ | $\tau \varepsilon$ |
| 001 | ＋6 | 68 | ¢8 | $8 L$ | ZL | 0 | 89 | 99 | ¢9 | 29 | ＋9 | t9 | ¢9 | z9 | 09 | 85 | 95 | os | Lt | I $\varepsilon$ |
| 001 | t6 | 88 | £8 | L | IL | 89 | L9 | £9 | 29 | t9 | £9 | £9 | 29 | 09 | 09 | 85 | 95 | os | $6{ }^{\text {b }}$ | $0 \varepsilon$ |
| 001 | t6 | 88 | 28 | 9 | $0<$ | $\llcorner 9$ | 99 | z9 | t9 | t9 | z9 | 29 | 29 | 19 | 09 | 85 | 95 | Is | $6{ }^{6}$ | $6 z$ |
| 001 | ＋6 | $\angle 8$ | 18 | ＋ | 89 | 99 | ¢9 | 99 | t9 | £9 | 29 | 29 | 19 | 09 | 09 | 85 | 95 | Is | $6{ }^{6}$ | $8 \tau$ |
| 001 | \＆6 | $\angle 8$ | 08 | $\dagger \angle$ | $\llcorner 9$ | 99 | $\llcorner 9$ | ＋9 | £9 | £9 | 09 | 19 | 19 | 09 | 85 | LS | ¢s | zs | Is | $\llcorner\tau$ |
| 001 | $\varepsilon 6$ | 98 | 08 | $\varepsilon L$ | 99 | 69 | 99 | t9 | ¢9 | 29 | 19 | 19 | LS | 85 | 85 | 95 | ¢s | zs | IS | $9 \tau$ |
| 001 | b6 | 88 | 18 | S $\llcorner$ | 69 | L9 | เ9 | £9 | 29 | £9 | 09 | 09 | 09 | 85 | 85 | 95 | ¢s | $\varepsilon \varsigma$ | zs | sz |
| 001 | ＋6 | 88 | 28 | 9 | 0 | $\angle 9$ | 99 | t9 | t9 | t9 | 19 | 19 | 19 | 09 | 65 | 65 | 95 | 95 | 09 | tz |
| 001 | ＋6 | 88 | 28 | 9 | 0 | 69 | $\llcorner 9$ | $\llcorner 9$ | ¢9 | s9 | t9 | £9 | $\varepsilon 9$ | z9 | 29 | 09 | 65 | $\varepsilon 9$ | 29 | $\varepsilon \tau$ |
| 001 | ＋6 | 88 | £8 | L | IL | 69 | 89 | 89 | 89 | 89 | ¢9 | t9 | t9 | t9 | ¢9 | $\varepsilon 9$ | 99 | 99 | ¢9 | $z \tau$ |
| 001 | t6 | 88 | ¢8 | LL | IL | IL | 0 | 0 | 0 | 0 | L9 | 99 | L9 | 99 | 99 | IL | 69 | 89 | 99 | $1 z$ |
| 001 | ¢6 | 06 | ${ }^{\text {＋8 }}$ | 6 | t $L$ | IL | IL | IL | IL | $0 L$ | 69 | L9 | 69 | 69 | t | tL |  |  | 69 | 02 |
| 001 | L6 | ＋6 | 16 | 88 | s8 | 28 | 28 | 28 | 18 | 18 | 6 | 6 | $6 L$ | $\llcorner 8$ | $\angle 8$ | L8 | ャ8 | ャ8 | ¢8 | 6 I |
| 001 | 66 | 86 | 86 | $\llcorner 6$ | 96 | \＆6 | \＆6 | r6 | z6 | 26 | z6 | 06 | 001 | 001 | 66 | 66 | 86 | 86 | 96 | 81 |
| 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 00I | 001 | 001 | 00I | 001 | 00I | 001 | 001 | 001 | 001 | LI |
| 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 91 |
| 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | ¢I－0 |
| ＋0z | 61 | 81 | LI | 91 | sI | †I | £I | zI | II | 0I | 6 | 8 |  | 9 |  | $t$ | $\varepsilon$ | $\tau$ | I | ${ }^{28} \mathrm{~V}$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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| OI | 00I | 00I | 00I | 00 I | O0I | 00I | 00I | 00I | 00I | 02 | 0L | OL | OL | ¢9 | 09 | 09 | SS | ZS | $8 \downarrow$ | 02 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 02 | 02 | OL | OL | ¢9 | 09 | 09 | ¢S | ZS | $\varepsilon 乙$ | 69 |
| O0I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 02 | OL | 02 | 02 | ¢9 | 09 | 09 | S¢ | てE | $\varepsilon 乙$ | 89 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 02 | 0L | 02 | OL | ¢9 | 09 | 09 | $6 \varepsilon$ | $0 \mathcal{L}$ | てZ | L9 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | $0 L$ | $0 L$ | 02 | OL | ¢9 | 09 | St | $6 \varepsilon$ | $0 \varepsilon$ | てZ | 99 |
| 00I | 00 I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 02 | 0 L | OL | OL | ¢9 | OS | St | $6 \varepsilon$ | $0 \varepsilon$ | てZ | ¢9 |
| O0I | 00I | 00I | 00I | 00I | O0I | 00I | 00I | 00I | 00I | SL | SL | SL | SL | IS | OS | St | $6 \varepsilon$ | $0 \varepsilon$ | てZ | t9 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | SL | SL | SL | ZS | OS | OS | St | $6 \varepsilon$ | $0 \varepsilon$ | てZ | E9 |
| 00I | 00I | 00I | 00I | 00 I | 00 I | 00I | 00I | 00I | 00I | SL | SL | ZS | IS | $6 t$ | $6 t$ | tt | $6 \varepsilon$ | $0 \varepsilon$ | $\varepsilon \tau$ | $z 9$ |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | SL | $\varepsilon \varsigma$ | ZS | OS | $6 t$ | $6 t$ | $\varepsilon \downarrow$ | $6 \varepsilon$ | $0 \varepsilon$ | $\varepsilon 乙$ | 19 |
| O0I | 00I | 00I | 00I | 00I | O0I | 00I | 00I | 00I | 00I | LS | $\varepsilon \varsigma$ | ZS | OS | $L t$ | $8 t$ | $\varepsilon \downarrow$ | $6 \varepsilon$ | $0 \varepsilon$ | $\varepsilon 乙$ | 09 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | $\varepsilon 9$ | 8S | ¢S | $\varepsilon \varsigma$ | IS | $8 \downarrow$ | $8 t$ | $\varepsilon \downarrow$ | $6 \varepsilon$ | $0 \varepsilon$ | $\varepsilon 乙$ | 69 |
| OOI | 00I | 00I | 00I | 00 I | 00 I | 00I | 00I | L9 | †9 | 6S | 95 | $\varepsilon \varsigma$ | OS | $8 \downarrow$ | $8 t$ | $\mathcal{E} \downarrow$ | $8 \mathcal{E}$ | IE | $\dagger 乙$ | 85 |
| O0I | 00I | 00I | 00I | 00I | 00I | 00I | ZL | 69 | 99 | 6S | 95 | $t S$ | IS | $6 t$ | $\angle t$ | $\varepsilon \downarrow$ | $8 \mathcal{E}$ | IE | 七て | LS |
| 00I | 00I | 00I | 00I | 00I | 00I | カL | $\varepsilon L$ | 0L | L9 | 19 | 95 | $t s$ | IS | $6 t$ | $\angle t$ | $\varepsilon t$ | LE | てع | $\bigcirc \_$ | 95 |
| O0I | 00 I | 00I | 00I | 00 I | $8 L$ | SL | †L | ZL | 89 | 19 | LS | SS | $\varepsilon \varsigma$ | OS | $\angle t$ | $\varepsilon \downarrow$ | $L \mathcal{L}$ | て\＆ | ¢Z | SS |
| O0I | 00I | 00I | 00I | 18 | 92 | SL | $\dagger L$ | ZL | L9 | 19 | LS | SS | $\varepsilon \varsigma$ | OS | $8 t$ | $t t$ | $8 \mathcal{E}$ | £ย | LZ | tS |
| O0I | 00I | 00I | 98 | 18 | 92 | SL | ナL | IL | L9 | 19 | LS | SS | $\varepsilon \varsigma$ | IS | $8 t$ | $t t$ | $6 \mathcal{L}$ | $\varsigma \mathcal{L}$ | LZ | Es |
| 00I | 00I | 06 | ¢8 | 08 | SL | カL | ZL | IL | 99 | 19 | LS | 95 | tS | IS | $6 t$ | St | It | $\bigcirc \mathcal{L}$ | 87 | zs |
| O0I | ¢6 | 06 | S8 | 08 | SL | $\varepsilon L$ | ZL | IL | 99 | 19 | $L S$ | 95 | tS | $\varepsilon \varsigma$ | $6 t$ | 9 t | てt | LE | 87 | IS |
| O0I | ¢6 | 06 | ¢8 | 08 | SL | $\varepsilon L$ | ZL | IL | 99 | I9 | LS | 95 | tS | $\varepsilon \varsigma$ | IS | Lt | カt | $8 \varepsilon$ | $0 \varepsilon$ | 0S |
| 00I | ¢6 | 06 | t8 | 6 L | tL | $\varepsilon L$ | ZL | 69 | 99 | 19 | $L S$ | 95 | ¢S | $\dagger$ ¢ | ZS | $6 t$ | $9 \downarrow$ | 0t | $0 \varepsilon$ | 6 |
| O0I | S6 | 06 | †8 | 62 | †L | $\varepsilon L$ | ZL | 89 | ¢9 | 19 | LS | LS | LS | 95 | $\dagger$ ¢ | ZS | $L t$ | It | て\＆ | $8 t$ |
| O0I | ¢6 | 06 | S8 | 08 | SL | $\dagger L$ | IL | 89 | ¢9 | 09 | 6 S | 8S | $L S$ | 95 | SS | $\varepsilon \varsigma$ | OS | ても | てE | $L$ |
| 00I | ¢6 | 06 | ¢8 | 08 | SL | カL | IL | L9 | $\varepsilon 9$ | 09 | 6 S | 6S | 6S | 8S | LS | 9S | ZS | $\varepsilon \dagger$ | I $\varepsilon$ | 9t |
| 00I | ¢6 | I6 | 98 | 28 | LL | tL | IL | 99 | $\varepsilon 9$ | 09 | 6 S | 09 | 09 | 09 | 6S | 8S | $\varepsilon \varsigma$ | St | $\dagger \mathcal{L}$ | st |
| O0I | ¢6 | 16 | 98 | 28 | LL | VL | IL | L9 | †9 | 29 | 19 | 09 | I9 | 09 | 65 | 8S | $\dagger$ ¢ | $\dagger t$ | $\dagger \mathcal{E}$ | tt |
| 00I | ¢6 | I6 | 98 | 28 | LL | ナL | ZL | L9 | 99 | ¢9 | 29 | Z9 | $\varepsilon 9$ | I9 | 09 | 65 | $\dagger S$ | $\varepsilon \downarrow$ | $\dagger \mathcal{L}$ | $\varepsilon \boldsymbol{t}$ |
| 00I | ¢6 | I6 | 98 | 28 | LL | SL | ZL | 69 | 99 | t9 | $\varepsilon 9$ | $\varepsilon 9$ | $\varepsilon 9$ | Z9 | 19 | 8S | $\varepsilon \varsigma$ | $\varepsilon \downarrow$ | $\dagger \mathcal{L}$ | Zt |
| 00I | S6 | I6 | 98 | 28 | LL | 9 L | $\dagger L$ | 0L | 89 | 99 | t9 | $\dagger 9$ | ¢9 | \＆9 | Z9 | 8S | $\varepsilon \varsigma$ | 什 | $\dagger \mathcal{L}$ | It |
| ＋0Z | 6I | 8I | LI | 9I | SI | tI | EI | ZI | II | 0I | 6 | 8 | $L$ | 9 | S | t | $\varepsilon$ | $\boldsymbol{z}$ | I | ${ }^{26} \mathrm{~V}$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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| 01 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 00I | 001 | 001 | 00 | 001 | 1001 | 00 | 001 | 00I | 00. | +¢8 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 01 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | $8+$ | เ8 |
| 0 I | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | zs | 8 | $\varepsilon 8$ |
| 01 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | ss | zs | $8{ }^{8}$ | z8 |
| 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 09 | ¢s | zs | $8 t$ | 18 |
| 001 | 001 | 00I | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 00I | 001 | 001 | 001 | 001 | 09 | 09 | ss | zs | 8 | 08 |
| 01 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | ¢9 | 09 | 09 | ss | zs | $8 t$ | 62 |
| 01 | 001 | 00I | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 00 L | 001 | 001 | 02 | ¢9 | 09 | 09 | ss | zs | $8 t$ | $8 L$ |
| 01 | 001 | 00I | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 0 | 02 | ¢9 | 09 | 09 | ss | zs | 8 | L |
| 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 0 | 0 | 02 | ¢9 | 09 | 09 | ¢s | 2s | $8 t$ | $9 L$ |
| 01 | 00 | 00I | 001 | 00 | 001 | 00I | 001 | 001 | 001 | 02 | 0 | 0 | 0 | ¢9 | 09 | 09 | Ss | zs | $8 t$ | SL |
|  | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | $0 L$ | 0 | 0 | 02 | ¢9 | 09 | 09 | ss | 2s | 8 | tL |
|  | 001 | 00I | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 02 | 0 | 0 | 0 | ¢9 | 09 | 09 | ss | 2s | $8 t$ | $\varepsilon\llcorner$ |
|  | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | $0 L$ | 0 | 0 | 0 | ¢9 | 09 | 09 | ¢s | 2s | $8 t$ | zL |
|  | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | $0 L$ | 02 | 0 | $0 L$ | ¢9 | 09 | 09 | ss | zs | $8 t$ | IL |
| +0z | 61 | 81 | LI | 91 | sI | tI | £I | zI | II | 01 | 6 | 8 | $L$ | 9 | s | $t$ | $\varepsilon$ | $\tau$ | I | ${ }^{28} \mathrm{~V}$ |
| uoperna |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



| 00I | t6 | 68 | E8 | 8L | ZL | $\varepsilon L$ | IL | 69 | L9 | 99 | †9 | t9 | $\varepsilon 9$ | Z9 | I9 | 8S | $\varepsilon \varsigma$ | It | $\dagger \mathcal{L}$ | 0t |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 00I | S6 | 68 | †8 | 8L | $\varepsilon L$ | $\varepsilon L$ | IL | 02 | 89 | 49 | ¢9 | †9 | £9 | Z9 | I9 | 8S | $\varepsilon$ ¢ | It | LE | $6 \varepsilon$ |
| 00I | ¢6 | 68 | t8 | 8L | $\varepsilon L$ | $\dagger L$ | ZL | 02 | 89 | 49 | ¢9 | ¢9 | $\varepsilon 9$ | Z9 | 19 | 85 | $\varepsilon \varsigma$ | St | $8 \varepsilon$ | $8 \varepsilon$ |
| 00I | S6 | 06 | †8 | 62 | カL | $\varepsilon L$ | IL | 69 | L9 | L9 | 99 | $\varepsilon 9$ | Z9 | I9 | 6 S | 8S | 9S | St | $8 \varepsilon$ | LE |
| 00I | S6 | 06 | S8 | 08 | SL | $\dagger L$ | ZL | 02 | 89 | 49 | 99 | $\varepsilon 9$ | 29 | 19 | 65 | Z9 | 95 | $L t$ | 0t | $9 \varepsilon$ |
| 00I | S6 | 06 | S8 | 08 | SL | ナL | ZL | 02 | 89 | L9 | 99 | $\varepsilon 9$ | 29 | I9 | $\varepsilon 9$ | Z9 | 9S | $L t$ | It | ¢ $\varepsilon$ |
| 00I | S6 | 06 | †8 | 62 | $\dagger L$ | $\dagger L$ | ZL | 02 | L9 | 99 | ¢9 | Z9 | 79 | t9 | £9 | 29 | 95 | 87 | $\varepsilon \downarrow$ | tE |
| 00I | ¢6 | 06 | t8 | 6 L | カL | $\varepsilon L$ | IL | 89 | 99 | ¢9 | \＆9 | 29 | ャ9 | $\varepsilon 9$ | Z9 | 09 | 95 | 67 | St | £ |
| 00I | ＋6 | 68 | E8 | 8L | ZL | IL | 89 | 99 | ¢9 | E9 | 29 | ャ9 | カ9 | $\varepsilon 9$ | Z9 | 09 | LS | OS | $9 t$ | z $\mathcal{L}$ |
| 00I | †6 | 88 | E8 | LL | IL | 02 | L9 | ¢9 | $\varepsilon 9$ | 29 | t9 | †9 | $\varepsilon 9$ | Z9 | 09 | 09 | LS | OS | Lt | IE |
| 00I | $\pm 6$ | 88 | 28 | 9 L | 02 | 89 | 99 | \＆9 | Z9 | †9 | \＆9 | \＆9 | $\varepsilon 9$ | Z9 | I9 | 09 | LS | IS | $6 t$ | $0 \varepsilon$ |
| 00I | $\pm 6$ | L8 | 18 | tL | 89 | L9 | ¢9 | \＆9 | 99 | t9 | \＆9 | Z9 | Z9 | I9 | I9 | 09 | LS | IS | $6 t$ | $6 Z$ |
| 00I | ＋6 | L8 | I8 | tL | 89 | 99 | \＆9 | 99 | 99 | t9 | 29 | 29 | $\varepsilon 9$ | I9 | 09 | 8S | LS | ZS | 67 | 87 |
| 00I | E6 | L8 | 08 | 七L | L9 | 99 | L9 | 99 | †9 | £9 | 29 | I9 | I9 | 09 | 09 | 8S | ¢S | ZS | IS | $L Z$ |
| 00I | E6 | L8 | 08 | $\dagger L$ | $\angle 9$ | 69 | 99 | †9 | †9 | $\varepsilon 9$ | 19 | I9 | I9 | 09 | 85 | 95 | SS | $\varepsilon \varsigma$ | IS | 97 |
| 00I | †6 | 88 | Z8 | 92 | OL | L9 | †9 | †9 | †9 | †9 | 19 | 09 | 09 | 8S | 85 | 95 | SS | $\varepsilon$ ¢ | ZS | SZ |
| 00I | ＋6 | 88 | \＆8 | LL | IL | 69 | 99 | 99 | L9 | S9 | \＆9 | I9 | I9 | 09 | 65 | 85 | 9S | SS | 6 S | 七て |
| 00I | †6 | 88 | E8 | LL | IL | 69 | L9 | 89 | 89 | 49 | t9 | \＆9 | \＆9 | Z9 | Z9 | 09 | 85 | 79 | 09 | \＆z |
| 00I | ¢6 | 68 | †8 | 8L | $\varepsilon L$ | 0L | 02 | 89 | 89 | 89 | L9 | เ9 | เ9 | t9 | £9 | Z9 | 99 | S9 | 29 | zz |
| 00I | ¢6 | 68 | †8 | 8L | $\varepsilon L$ | I $L$ | IL | 0L | 0L | $0 L$ | L9 | 99 | L9 | 99 | 99 | IL | 89 | 99 | \＆9 | IZ |
| 00I | S6 | 06 | ¢8 | 08 | SL | ZL | ZL | IL | IL | 02 | 69 | L9 | 69 | 69 | ¢L | ZL | 69 | 89 | S9 | 07 |
| 00I | L6 | $\downarrow 6$ | Z6 | 68 | 98 | E8 | E8 | 28 | I8 | I8 | 62 | 62 | 62 | L8 | L8 | 98 | E8 | I8 | 08 | 6I |
| 00I | 66 | 86 | 86 | L6 | 96 | ¢6 | ¢6 | 26 | 26 | Z6 | 26 | 06 | 00I | 00I | 66 | 86 | 96 | ¢6 | E6 | 8I |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | LI |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 9I |
| 00I | 00I | 00I | 00I | 00 I | 00I | 00I | 00I | 00I | 00I | 00I | 001 | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | SI－0 |
| ＋0Z | 6I | 8I | LI | 9I | SI | tI | $\varepsilon I$ | ZI | II | 0I | 6 | 8 | $L$ | 9 | S | $t$ | $\varepsilon$ | $\tau$ | I | ${ }^{\circ} \mathrm{s} \mathrm{V}$ |
|  |  |  |  |  |  |  |  |  | ． $\mathbf{\partial Y}$ | $\begin{gathered} \text { uo! } \\ \text { us-uo } \\ \text { 乙 Ә[9 } \end{gathered}$ |  |  |  |  |  |  |  |  |  | ənsSI |



| 001 | 001 | 00I | 001 | 001 | 00I | 00I | 001 | 001 | 001 | 102 | 0 | $0 L$ | $0 L$ | ¢9 | 09 | 09 | S¢ | zs | $8+$ | $0 L$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 001 | 001 | 001 | 001 | 001 | 00I | 001 | 00. | 001 | 001 | 02 | 0 | $0 L$ | 0 | ¢9 | 09 | 09 | ss | zs | 81 | 69 |
| 001 | 001 | 00I | 001 | 001 | 00I | 00I | 001 | 001 | 001 | $0 L$ | 0 | 0 | 0 | ¢9 | 09 | 09 | ss | tr | 81 | 89 |
| 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | OL | 0 | 0 | $0<$ | ¢9 | 09 | 09 | $2 \varepsilon$ | tr | 81 | $\llcorner 9$ |
| 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 02 | 0 | $0 L$ | 0 | ¢9 | 09 | $9 \varepsilon$ | $2 \varepsilon$ | tc | 81 | 99 |
| 001 | 001 | 00I | 001 | 001 | 00I | 00I | 00I | 001 | 001 | $0 L$ | 0 | $0 L$ | $0 L$ | ¢9 | $6 \varepsilon$ | $9 \varepsilon$ | $2 \varepsilon$ | ti | 81 | ¢9 |
| 001 | 001 | 001 | 001 | 001 | 00I | 001 | 001 | 001 | 001 | SL | SL | SL | SL | 0 | $6 \varepsilon$ | $9 \varepsilon$ | $2 \varepsilon$ | tて | 81 | t9 |
| 001 | 001 | 001 | 001 | 001 | 00I | 001 | 001 | 001 | 001 | SL | $\varsigma \iota$ | ¢ | It | 0t | Ot | 98 | $\varepsilon \varepsilon$ | 5 | 61 | £9 |
| 001 | 001 | 00I | 001 | 001 | 00I | 001 | 001 | 001 | 001 | SL | SL | てt | It | $0 t$ | Ot | $8 \varepsilon$ | $\tau$ | st | 61 | 79 |
| 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | 001 | SL | 2t | てt | It | $0+$ | It | $L \varepsilon$ | £ $\varepsilon$ | 92 | 02 | 19 |
| 001 | 001 | 0I | 001 | 001 | 00I | 001 | 001 | 001 | 001 | st | 2t | てt | It | 0t | It | Lع | $\varepsilon \varepsilon$ | 92 | 02 | 09 |
| 001 | 001 | 00I | 001 | 001 | 00I | 001 | 001 | 001 | OS | $9 t$ | 比 | 切 | てt | It | It | Lع | $\varepsilon \varepsilon$ | 92 | z | 65 |
| 001 | 001 | 001 | 001 | 001 | 00I | 001 | 001 | \＆s | Is | Lt | st | St | $\varepsilon t$ | It | It | LE | $\varepsilon \varepsilon$ | 82 | zz | 85 |
| 001 | 001 | 001 | 001 | 001 | 00I | 001 | 95 | ¢s | $\varepsilon \varsigma$ | ${ }^{6+}$ | Lt | st | $\varepsilon t$ | 2t | で | $8 \varepsilon$ | $\varsigma \varepsilon$ | 82 | $\varepsilon \tau$ | Ls |
| 001 | 001 | 001 | 001 | 001 | 001 | 65 | 85 | LS | ss | OS | $8+$ | $\stackrel{+}{ }$ | t | zt | で | $8 \varepsilon$ | ¢ $\varepsilon$ | 62 | $\varepsilon \tau$ | 9s |
| 001 | 00I | 00I | 001 | 001 | z9 | 19 | 65 | 85 | 9S | OS | $6{ }^{\text {b }}$ | $8{ }^{8}$ | St | \＆t | で | $8 \varepsilon$ | ¢ $\varepsilon$ | 6 | ヶ乙 | ss |
| 001 | 001 | 001 | 001 | 0 | z9 | 19 | 65 | 65 | ss | IS | $6{ }^{+}$ | 8 | Lt | t＋ | \＆t | $6 \varepsilon$ | $9 \varepsilon$ | 0 | sz | ts |
| 001 | 001 | 00I | LL | 0 | z9 | 19 | 19 | 65 | 95 | IS | os | $6{ }^{6}$ | Lt | st | tt | It | Lع | I | sz | £s |
| 001 | 001 | 58 | LL | 0 | 29 | 29 | 09 | 09 | 95 | \＆s | 0s | $6{ }^{6}$ | 8 | St | to | てt | $6 \varepsilon$ | ＋ | $\angle 2$ | zs |
| 001 | 26 | 58 | LL | 0 | 29 | 19 | 19 | 09 | Ls | \＆s | Is | 0 S | 8 | Lt | st | \＆ | $0+$ | ¢ | $L \tau$ | Is |
| 001 | 26 | ＋8 | LL | 69 | 19 | 19 | 19 | 19 | LS | ts | IS | 0s | $6{ }^{\text {b }}$ | $8 t$ | 4 | st | てt | LE | 62 | 0 S |
| 001 | 26 | 58 | LL | 0 | 29 | z9 | 19 | 19 | Ls | tS | \＆s | IS | $0 S^{\circ}$ | IS | os | $8 \downarrow$ | £t | 6 | 62 | $6 t$ |
| 001 | \＆6 | 58 | $8 L$ | 0 | £9 | £9 | 29 | 19 | Ls | ss | ts | \＆s | $\varepsilon \varsigma$ | zs | IS | $6{ }^{6}$ | $9+$ | 0 | $0 \varepsilon$ | $8 t$ |
| 001 | \＆6 | 98 | 08 | $\varepsilon \iota$ | 99 | $\varepsilon 9$ | 29 | 19 | 65 | ss | ts | ts | ss | ss | ts | zs | $8 t$ | 0 | $0 \varepsilon$ | Lt |
| 001 | \＆6 | $\angle 8$ | 08 | tL | $\angle 9$ | ¢9 | £9 | 19 | 65 | 95 | ¢S | 95 | Ls | Ls | 95 | ts | OS | 2t | て¢ | $9+$ |
| 001 | ＋6 | $\llcorner 8$ | 18 | tL | 89 | 99 | £9 | 19 | 65 | Ls | LS | Ls | 65 | 09 | 65 | LS | zs | tt | て¢ | st |
| 001 | t6 | 88 | 18 | ¢ $<$ | 69 | L9 | ¢9 | z9 | 09 | 85 | 65 | 65 | 09 | 09 | 65 | LS | zs | t | て¢ | 比 |
| 00I | ${ }^{\text {b6 }}$ | 88 | 18 | SL | 69 | 89 | 99 | ＋9 | 29 | 09 | 09 | 09 | 09 | 19 | 09 | 85 | \＆s | \＆t | てع | $\mathfrak{E t}$ |
| 001 | ${ }^{\text {b6 }}$ | 88 | ¢8 | LL | IL | 69 | L9 | 99 | t9 | £9 | 19 | 19 | て9 | 19 | 09 | 85 | $\varepsilon$ ¢ | \＆t | $\pm \varepsilon$ | 2t |
| 001 | ${ }^{+6}$ | 88 | ¢8 | LL | IL | IL | 69 | L9 | ¢9 | S9 | £9 | 29 | 29 | 19 | 19 | 85 | ¢s | It | $\pm \varepsilon$ | It |
| ＋02 | 6 | 81 | $L$ | 91 | sI | －1 | \＆I | zI | II | 01 | 6 | 8 | $L$ | 9 | s |  |  |  | 1 | ${ }^{28} \mathrm{~V}$ |




| 00I | L6 | t6 | 26 | 68 | 98 | ¢8 | £8 | 08 | $8 L$ | 94 | $\dagger L$ | tL | $\varepsilon L$ | ZL | IL | 89 | $\varepsilon 9$ | 6 t | It | 0t |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 00I | L6 | t6 | 26 | 68 | 98 | 98 | เ8 | 18 | 6 L | LL | SL | tL | tL | ZL | IL | 02 | ¢9 | OS | St | $6 \varepsilon$ |
| 00I | L6 | ¢6 | 26 | 06 | $\angle 8$ | ¢8 | £8 | 18 | 6 L | $8 L$ | $9 L$ | ¢ $\llcorner$ | †L | tL | ZL | $0 L$ | 99 | ¢ऽ | $8 t$ | $8 \varepsilon$ |
| 00I | L6 | t6 | 26 | 68 | 98 | 98 | เ8 | 18 | $6 L$ | $8 L$ | LL | 92 | SL | tL | tL | IL | 02 | 8S | $6{ }^{+}$ | LE |
| 00I | L6 | ¢6 | 26 | 06 | $\angle 8$ | ¢8 | £8 | 18 | 62 | $6 L$ | LL | $9 L$ | SL | SL | tL | S $\angle$ | IL | 65 | zs | $9 \varepsilon$ |
| 00I | 86 | ¢6 | £6 | 06 | 88 | 98 | เ8 | 28 | 08 | 62 | LL | 91 | ¢ $L$ | SL | $6 L$ | LL | $\varepsilon L$ | 09 | $\varepsilon ¢$ | ¢ $\varepsilon$ |
| 00I | L6 | ¢6 | 26 | 06 | $\angle 8$ | ¢8 | £8 | 18 | 6 L | 62 | LL | 91 | ¢ $\angle$ | $6 L$ | 62 | LL | tL | 29 | LS | t $\mathcal{E}$ |
| 00I | L6 | t6 | I6 | 88 | ¢8 | ¢8 | £8 | 08 | $6 L$ | LL | LL | 92 | 18 | 6 L | 62 | $8 L$ | tL | ¢9 | 09 | $\mathfrak{E}$ ¢ |
| 00I | L6 | t6 | I6 | 88 | S8 | E8 | E8 | 08 | LL | LL | 94 | 18 | 18 | 18 | 62 | $8 L$ | LL | L9 | £9 | z |
| 00I | L6 | E6 | 06 | 98 | £8 | 18 | 18 | $6 L$ | LL | 92 | 18 | 18 | 28 | 18 | $6 L$ | I8 | LL | 02 | S9 | I $\varepsilon$ |
| 00I | 96 | Z6 | 68 | ¢8 | 18 | 08 | 08 | LL | 92 | 18 | 18 | 18 | 28 | 18 | 18 | 18 | $8 L$ | IL | 89 | $0 \varepsilon$ |
| 00I | 96 | 26 | 68 | ¢8 | 18 | 08 | 08 | LL | 18 | 18 | 18 | 18 | z8 | 28 | 18 | 18 | 8L | UL | 69 | $6 \tau$ |
| 00I | 96 | 26 | 68 | ¢8 | 18 | 08 | 08 | 28 | 28 | 28 | 18 | 18 | £8 | 28 | 18 | 28 | $6 L$ | $\varepsilon L$ | IL | 87 |
| 00I | 96 | 26 | 68 | ¢8 | 18 | 08 | เ8 | †8 | 28 | 28 | 28 | 28 | £8 | E8 | 28 | 28 | $8 L$ | SL | $\varepsilon L$ | $L Z$ |
| 00I | 96 | 26 | 68 | ¢8 | 18 | ¢8 | †8 | t8 | +8 | †8 | \&8 | 28 | £8 | £8 | 28 | 78 | 6 L | LL | SL | 97 |
| 00I | L6 | +6 | 26 | 68 | 98 | ¢8 | เ8 | t8 | เ8 | ¢8 | £8 | 28 | £8 | E8 | 18 | 28 | 6 L | $8 L$ | LL | sz |
| 00I | 86 | 96 | ع6 | 16 | 68 | 88 | 98 | 98 | 88 | 88 | 98 | 98 | 88 | 98 | ¢8 | ¢8 | 28 | I8 | L8 | tz |
| 00I | 86 | L6 | ¢6 | +6 | 26 | 06 | 68 | 06 | 06 | 06 | 06 | 68 | 68 | 68 | 88 | 88 | ¢8 | 26 | 06 | £z |
| 00I | 66 | L6 | 96 | +6 | E6 | Z6 | E6 | E6 | ¢6 | ¢6 | E6 | 26 | E6 | E6 | 06 | 06 | 96 | ¢6 | 26 | z |
| 00I | 66 | 86 | 86 | L6 | 96 | 96 | 96 | 96 | L6 | L6 | 96 | ¢6 | 96 | 96 | ¢6 | 001 | 66 | 86 | ¢6 | 12 |
| 00I | 00 I | 001 | 001 | 00I | 00I | 66 | 66 | 66 | 00I | 66 | 66 | 66 | 001 | 00I | 00I | 00 I | 00I | 001 | 86 | $0 \tau$ |
| 00I | 00I | 00 I | 001 | 00I | 00I | 001 | 00I | 00I | 00I | 00I | 001 | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 61 |
| 00I | 00I | 00I | 001 | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 001 | 00I | 00I | 00I | 00I | 001 | 00I | 81 |
| 00I | 00I | 00 I | 001 | 001 | 00I | 001 | 00I | 00I | 00I | 00I | 001 | 00I | 001 | 00I | 00I | 00I | 00I | 001 | 00I | LI |
| 00I | 00I | 001 | 001 | 001 | 00I | 00I | 00I | 00I | 00I | 00I | 001 | 00I | 001 | 00I | 001 | 001 | 00I | 001 | 001 | 91 |
| 00I | 00I | 001 | 001 | 001 | 00I | 00I | 00I | 00I | 00I | 00I | 001 | 00I | 001 | 00I | 001 | 001 | 001 | 001 | 00I | SI-0 |
| +0z | 61 | 81 | LI | 9 I | SI | †I | \&I | zI | II | 0I | 6 | 8 | $L$ | 9 | s | $t$ | $\varepsilon$ | $\tau$ | I | ${ }^{\text {ว }} \mathrm{V}$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 02 | OL | 0L | OL | ¢9 | 09 | 09 | SS | ZS | $8 \pm$ | $0 L$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 00I | 00I | 00I | 00I | 00 I | 00I | 00I | 00I | 00I | 00I | 02 | 02 | 0L | OL | ¢9 | 09 | 09 | S¢ | ZS | LZ | 69 |
| 00I | 00I | 00I | 00I | 00 I | 00I | 00I | 00I | 00I | 00I | OL | OL | 0L | 0L | ¢9 | 09 | 09 | ¢ऽ | $9 \varepsilon$ | ¢Z | 89 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | OL | OL | 0L | 02 | ¢9 | 09 | 09 | St | $\bigcirc \mathcal{¢}$ | ¢Z | $\angle 9$ |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 02 | OL | 0L | 02 | ¢9 | 09 | ES | St | $\bigcirc \mathcal{S}$ | $\dagger$ ¢ | 99 |
| 00I | 00I | 00I | 00I | 00 I | 00I | 00I | 00I | 00I | 00I | OL | OL | 0L | 0L | ¢9 | LS | ZS | St | $\dagger \mathcal{L}$ | ちて | ¢9 |
| 00I | 00I | 00I | 00I | 00 I | 00I | 00I | 00I | 00I | 00I | SL | SL | SL | SL | LS | LS | IS | St | $\dagger \mathcal{L}$ | ちて | t9 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | SL | SL | SL | 6 S | 95 | 9S | IS | St | $\varepsilon \varepsilon$ | $\dagger$ ¢ | $\varepsilon 9$ |
| 00I | 00I | 00I | 00I | 00 I | 00I | 00I | 00I | 00I | 00I | SL | SL | I9 | 8S | 95 | 9S | OS | $\mathcal{E} \downarrow$ | $\mathcal{E}$ ¢ | $\bigcirc \preceq$ | $z 9$ |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | SL | $\varepsilon 9$ | 6 S | LS | ¢S | SS | $6 t$ | $\varepsilon \downarrow$ | $\varepsilon \varepsilon$ | ¢Z | 19 |
| 00I | 00I | 00I | 00I | 00 I | 00I | 00I | 00I | 00I | 00I | 99 | て9 | 8S | 9S | £ $¢$ | $t S$ | 8t | $\varepsilon \downarrow$ | $\varepsilon \varepsilon$ | ¢Z | 09 |
| 00I | 00I | 00I | 00I | 00 I | 00I | 00I | 00I | 00I | $\varepsilon L$ | 99 | \＆9 | 6 S | LS | $\varepsilon \varsigma$ | $\dagger S$ | $8 \downarrow$ | $\varepsilon \downarrow$ | $\varepsilon \varepsilon$ | 92 | 65 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 8L | $\mathcal{E} L$ | $\angle 9$ | $\varepsilon 9$ | 6 S | 95 | $t S$ | $\dagger$ ¢ | 8t | $\varepsilon \downarrow$ | $\varepsilon \varepsilon$ | 92 | 85 |
| 00I | 00I | 00I | 00I | 00 I | 00I | 00I | I8 | 8L | カL | $\angle 9$ | t9 | 09 | LS | tS | ES | Lt | ても | $\varsigma \mathcal{L}$ | 82 | LS |
| 00I | 00I | 00I | 00I | 00 I | 00I | ¢8 | E8 | 6 L | †L | 89 | $\varepsilon 9$ | 09 | LS | SS | \＆S | $L \downarrow$ | ても | $\bigcirc \mathcal{¢}$ | 87 | 9S |
| 00I | 00I | 00I | 00I | 00 I | 06 | 98 | t8 | 08 | SL | L9 | ¢9 | I9 | 6 S | SS | \＆ऽ | Lt | で | $\varsigma \varepsilon$ | 62 | SS |
| 00I | 00I | 00I | 00I | I6 | 68 | ¢8 | t8 | 08 | tL | $\angle 9$ | ¢9 | I9 | 6 S | ¢ऽ | ES | $8 \pm$ | $\varepsilon \downarrow$ | $9 \varepsilon$ | $0 \varepsilon$ | tS |
| 00I | 00I | 00I | 26 | 06 | L8 | ¢8 | E8 | 62 | カL | $\angle 9$ | ¢9 | L9 | 6 S | 95 | $t S$ | $6 t$ | カt | LE | $0 \varepsilon$ | £S |
| 00I | 00I | t6 | I6 | 88 | ¢8 | カ8 | I8 | 8L | $\varepsilon L$ | L9 | $\varepsilon 9$ | L9 | 09 | 95 | $t S$ | OS | $9 \downarrow$ | 0t | て¢ | ZS |
| 00I | L6 | $\dagger 6$ | 06 | L8 | †8 | E8 | 08 | 8L | $\varepsilon L$ | $\angle 9$ | $\varepsilon 9$ | I9 | 09 | LS | SS | ZS | Lt | で | てE | IS |
| 00I | 96 | 26 | 68 | S8 | I8 | I8 | 08 | 8L | $\varepsilon L$ | L9 | $\varepsilon 9$ | I9 | 09 | LS | SS | \＆S | $6 \pm$ | $\varepsilon \downarrow$ | $\dagger \mathcal{L}$ | 0S |
| 00I | L6 | E6 | 06 | 98 | £8 | I8 | 08 | LL | ZL | $\angle 9$ | \＆9 | 29 | ［9 | 6S | 8S | 95 | IS | St | $\dagger \mathcal{L}$ | $6 t$ |
| 00I | L6 | E6 | 06 | 98 | £8 | I8 | 6 L | SL | ZL | $\angle 9$ | ¢9 | \＆9 | \＆9 | 29 | 09 | 8S | $\varepsilon \varsigma$ | $9 t$ | $\bigcirc \mathcal{L}$ | $8 t$ |
| 00I | L6 | เ6 | 06 | L8 | †8 | L8 | 6 L | SL | IL | $\angle 9$ | ¢9 | †9 | †9 | 59 | $\varepsilon 9$ | I9 | ¢ऽ | Lt | $9 \varepsilon$ | Lt |
| 00I | L6 | カ6 | 06 | L8 | †8 | I8 | 8L | カL | IL | $\angle 9$ | 99 | 99 | 99 | L9 | ¢9 | \＆9 | 8S | $8 t$ | LE | 9t |
| 00I | L6 | †6 | I6 | 88 | S8 | I8 | 8L | $\varepsilon L$ | 69 | L9 | L9 | L9 | 89 | 89 | 89 | 99 | 09 | OS | LE | St |
| 00I | L6 | t6 | I6 | 88 | ¢8 | I8 | 6 L | ナL | IL | 69 | 69 | 69 | 89 | 69 | 89 | 99 | 09 | OS | $6 \varepsilon$ | tt |
| 00I | L6 | $\downarrow 6$ | I6 | 88 | S8 | £8 | 62 | 92 | $\varepsilon L$ | IL | OL | 0L | 02 | 69 | 69 | L9 | 29 | OS | $6 \varepsilon$ | $\varepsilon \boldsymbol{t}$ |
| 00I | L6 | ＋6 | I6 | 88 | ¢8 | \＆8 | 18 | 9 L | SL | $\varepsilon L$ | IL | IL | IL | IL | OL | 89 | Z9 | $6 t$ | 0t | Zt |
| 00I | L6 | 七6 | I6 | 88 | S8 | †8 | I8 | 8L | 9L | SL | $\varepsilon L$ | ZL | ZL | ZL | IL | 89 | \＆9 | $6 t$ | 0t | It |
| ＋0Z | 6I | 8I | LI | 9I | SI | tI | $\varepsilon$ £ | ZI | II | 0 I | 6 | 8 | $L$ | 9 | S | t | $\varepsilon$ | $\tau$ | I | 28 V |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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| 00I | 00I | 00I | 00I | 00I | 00I | 00 I | 00I | 00I | 00 I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | +58 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 00I | 00I | 00I | 00I | 00I | 001 | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00 I | 001 | $8 \downarrow$ | t8 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 2S | $8 t$ | £8 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | ¢¢ | 2S | $8 t$ | z8 |
| 001 | 00I | 00I | 001 | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 09 | ¢s | zs | $8 t$ | 18 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00 I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 09 | 09 | ¢¢ | 2S | $8 t$ | 08 |
| 00I | 00I | 00I | 00I | 00I | 001 | 00I | 00I | 00I | 001 | 00I | 00I | 00I | 00I | S9 | 09 | 09 | ¢s | 2s | $8 t$ | 64 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 001 | 00I | 00I | 00I | 02 | ¢9 | 09 | 09 | ¢¢ | 2s | $8 \downarrow$ | $8 L$ |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 001 | 02 | 02 | ¢9 | 09 | 09 | ¢¢ | 2S | $8 t$ | $\angle L$ |
| 00 I | 00I | 00I | 001 | 00I | 001 | 00I | 00I | 00I | 00I | 00I | 02 | $0 L$ | 02 | ¢9 | 09 | 09 | ¢S | 2S | $8 \downarrow$ | $9 L$ |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 02 | $0 L$ | 02 | $0 L$ | ¢9 | 09 | 09 | ¢¢ | 2S | $8 \downarrow$ | S $\angle$ |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 02 | $0 L$ | 02 | 02 | S9 | 09 | 09 | ¢s | 2s | $8 \downarrow$ | $t \angle$ |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 02 | $0 L$ | 02 | $0 L$ | S9 | 09 | 09 | ¢¢ | 2s | $8 \downarrow$ | $\varepsilon\llcorner$ |
| 00I | 00 I | 00I | 001 | 00I | 00I | 00I | 00I | 00I | 00I | 02 | 02 | $0 L$ | 02 | S9 | 09 | 09 | ¢¢ | zs | $8 \downarrow$ | ZL |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 02 | $0 L$ | 02 | $0 L$ | S9 | 09 | 09 | ¢S | 2S | $8 \downarrow$ | IL |
| +02 | 6 I | 8I | LI | 9I | SI | †I | \&I | zI | II | 0I | 6 | 8 | $L$ | 9 | s | t | $\varepsilon$ | $\tau$ | I | ${ }^{28} \mathrm{~V}$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



| 001 | ¢6 | 68 | เ8 | $8 L$ | EL | $\varepsilon L$ | 0L | 69 | $0 L$ | 69 | 89 | L9 | ¢9 | ¢9 | 8S | £¢ | St | 0t | て¢ | 0t |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 00I | ¢6 | 06 | ＋8 | 6 L | ¢ $\llcorner$ | $\varepsilon L$ | OL | OL | $0 L$ | 69 | 69 | 89 | 99 | $\varepsilon 9$ | 8 S | £S | St | 0t | $\dagger \varepsilon$ | 6£ |
| 00I | ¢6 | 06 | ¢8 | 08 | SL | tL | LL | IL | IL | 02 | 69 | 89 | 99 | $\varepsilon 9$ | $\angle S$ | zs | to | It | $\dagger \mathcal{L}$ | $8 \varepsilon$ |
| 00I | ¢6 | 06 | t8 | 6 L | t $\angle$ | SL | $\varepsilon L$ | UL | UL | 69 | 89 | L9 | S9 | 29 | $\angle S$ | zs | $\angle t$ | It | $9 \varepsilon$ | $\angle \varepsilon$ |
| 00I | ¢6 | 06 | ¢8 | 08 | SL | SL | $\dagger L$ | tL | tL | 02 | 89 | $\angle 9$ | ¢9 | 29 | Ss | $\varepsilon \varsigma$ | St | $0 t$ | $9 \varepsilon$ | $9 \varepsilon$ |
| 00I | ¢6 | 06 | ¢8 | 08 | SL | 91 | SL | tL | ¢ $L$ | 02 | 89 | L9 | S9 | I9 | 6S | £¢ | St | 0t | $9 \varepsilon$ | ¢ $\varepsilon$ |
| 00I | ¢6 | 06 | 98 | 18 | 92 | 92 | $9 L$ | tL | tL | 89 | L9 | 99 | $\varepsilon 9$ | $\varepsilon 9$ | 85 | zs | St | $0 \downarrow$ | $9 \varepsilon$ | tE |
| 00I | ¢6 | 06 | 98 | 18 | 92 | 94 | SL | tL | UL | $\angle 9$ | 99 | ¢9 | カ9 | z9 | 8 S | zs | tt | $6 \varepsilon$ | $9 \varepsilon$ | $\varepsilon \varepsilon$ |
| 00I | ¢6 | 06 | 98 | 18 | 94 | 94 | ¢ $L$ | UL | UL | 99 | ¢9 | 99 | £9 | 6 S | 95 | IS | St | $6 \varepsilon$ | $\varsigma \varepsilon$ | zع |
| 001 | ¢6 | 06 | 98 | 18 | 92 | SL | $t L$ | IL | IL | 59 | L9 | t9 | 09 | 85 | 95 | IS | $\varepsilon \downarrow$ | $8 \varepsilon$ | $\bigcirc \mathcal{L}$ | IE |
| 00I | ¢6 | 06 | 98 | 18 | 92 | ¢ $L$ | $\dagger L$ | IL | $0 L$ | L9 | 99 | £9 | 6 S | 95 | 95 | OS | $\varepsilon$ | $8 \varepsilon$ | $\varsigma \varepsilon$ | $0 \varepsilon$ |
| 00I | ¢6 | 06 | ¢8 | 08 | SL | tL | IL | $0 L$ | $\varepsilon L$ | ¢9 | £9 | 09 | 85 | 95 | ts | $6 t$ | $\varepsilon$ | $8 \varepsilon$ | $\dagger \mathcal{L}$ | $6 \tau$ |
| 00I | ¢6 | 06 | t8 | 6 L | t $L$ | UL | OL | $\varepsilon L$ | 02 | £9 | 29 | 6S | 95 | \＆S | £ऽ | $L$ | $\varepsilon t$ | LE | $\downarrow \mathcal{L}$ | $8 \tau$ |
| 00I | t6 | 88 | £8 | LL | IL | OL | $\varepsilon L$ | $0 L$ | 69 | 09 | 6S | LS | ts | IS | OS | Lt | It | $8 \varepsilon$ | $\downarrow \mathcal{L}$ | $\angle \tau$ |
| 001 | ＋6 | 88 | 28 | $9 L$ | 02 | $\varepsilon L$ | OL | 69 | 99 | 65 | 85 | 95 | IS | $6 t$ | $6 t$ | st | It | $8 \varepsilon$ | $\pm \mathcal{L}$ | 92 |
| 00I | ¢6 | 68 | t8 | $8 L$ | $\varepsilon L$ | IL | 69 | L9 | t9 | LS | 95 | $\varepsilon \varsigma$ | 0S | Lt | Lt | tt | It | $8 \varepsilon$ | $\downarrow \mathcal{L}$ | sz |
| 00I | t6 | 88 | 28 | 9 L | OL | 69 | 99 | t9 | t9 | 95 | ts | IS | OS | Lt | $\angle t$ | tt | てt | 0t | $6 \varepsilon$ | tz |
| 00I | ＋6 | 88 | 18 | SL | 69 | L9 | t9 | t9 | I9 | $t s$ | £ऽ | IS | $6 t$ | Lt | $\angle t$ | St | tt | St | てt | $\varepsilon \tau$ |
| 00I | \＆6 | 98 | 08 | $\varepsilon L$ | 99 | t9 | £9 | 19 | 09 | $t s$ | £S | 67 | $8 t$ | Lt | $\angle t$ | St | 8 t | $\angle t$ | to | zz |
| 001 | \＆6 | 98 | $8 L$ | IL | t9 | t9 | 19 | 09 | LS | ES | IS | $6 t$ | $8 t$ | $\angle t$ | $\angle t$ | IS | OS | $8 \pm$ | Lt | 12 |
| 00I | \＆6 | ¢8 | $8 L$ | 02 | £9 | I9 | 8S | LS | 95 | IS | $6 t$ | $8 t$ | $8 t$ | Lt | IS | IS | IS | 0S | 8t | $0 \tau$ |
| 00I | ¢6 | 06 | ¢8 | 08 | SL | †L | UL | IL | 69 | 99 | t9 | £9 | E9 | 89 | 89 | 89 | 89 | 99 | ¢9 | 6I |
| 00I | 86 | ¢6 | £6 | 06 | 88 | 88 | ¢8 | t8 | 28 | 62 | $8 L$ | $8 L$ | 98 | t8 | ¢8 | ＋8 | ャ8 | E8 | E8 | 8I |
| 00I | 00I | 00I | 001 | 001 | 00 I | 00I | L6 | L6 | 96 | S6 | \＆6 | 00I | 00I | 001 | 001 | 00I | 001 | 00I | 66 | LI |
| 001 | 00I | 00I | 001 | 001 | 001 | 00I | 00I | 001 | 001 | 00I | 00I | 001 | 00I | 001 | 001 | 00I | 001 | 001 | 001 | 91 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 001 | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 001 | SI－0 |
| ＋0z | 6 I | 8I | LI | 9I | SI | †I | $\varepsilon$ £ | zI | II | 0I | 6 | 8 | $L$ | 9 | s | $t$ | $\varepsilon$ | $\tau$ | 1 | ${ }^{\text {\％}} \mathrm{V}$ |


| bol ool our our oun oin | $\begin{gathered} \text { ool } \\ \text { out } \\ \text { out } \\ \text { oor } \end{gathered}$ | out out out out out oot | $\begin{array}{r}001 \\ \text { ool } \\ \text { oor } \\ \text { oor } \\ \text { ool } \\ \hline 01\end{array}$ |  |  | 001 <br> ool <br> oor <br> ool <br> ool <br> 1 | 001 ool oor ool ool 0 | $\begin{gathered} \text { oon } \\ \text { oor } \\ \text { out } \\ \text { oor } \end{gathered}$ | $\begin{aligned} & \text { ool } \\ & \text { ool } \\ & \text { ool } \\ & \text { ool } \\ & \text { on } \end{aligned}$ | $\begin{aligned} & \text { o8 } \\ & 08 \\ & 08 \\ & 08 \\ & 08 \\ & 08 \\ & \hline 08 \\ & \hline \end{aligned}$ | 08 08 08 08 08 08 |  |  | $z L$ $z L$ $z L$ $z L$ $z L$ | zi | ${ }_{2}^{89}$ |  |  | $\begin{aligned} & 61 \\ & 61 \end{aligned}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 01 | 001 |  | 001 | 001 | 001 | 001 |  | 01 |  |  |  | st |  | z |  |  |  |  |  |  |  |
| oor | 001 | 00I | 001 <br> oit | $\substack{001 \\ \text { oil }}$ | 001 | ool <br> Oot | oor |  |  | ${ }_{08}^{08}$ | 08 | 08 | ${ }^{0} 8$ | $\overbrace{t}^{2 x}$ | ${ }_{\text {ort }}^{\text {ort }}$ |  | ${ }^{z \varepsilon}$ |  |  |  |  |
| $\left.\right\|_{\text {poot }} ^{0001}$ | $\infty_{001}^{\infty}$ | ${ }^{001}$ | oor |  | 0ol | 0ot | Ool | ${ }^{2001}$ |  | ${ }_{08}^{08}$ | 08 |  | ${ }_{4+}$ | ${ }_{\text {st }}$ | $\left.\right\|_{i t} ^{i t}$ | $\begin{gathered} 8 \varepsilon \\ 6 \varepsilon \\ 6 \varepsilon \end{gathered}$ | $\begin{gathered} \varepsilon \varepsilon \\ \varepsilon \varepsilon \\ \varepsilon \end{gathered}$ |  |  |  |  |
|  | 001 |  | 001 | 001 | 01 | 001 | 001 | 001 |  | 18 | is | os |  | st | zt |  |  |  |  |  |  |
| 0 | 001 | 00 | 001 | 00 | 001 | 01 | 001 | 001 | oid |  | ¢s | IS | 5 |  | tr |  | ${ }^{\text {ge }}$ |  |  |  |  |
| 0 | 001 | 00 | 001 | 001 | 00 | 00 | 001 | 001 |  | ${ }^{5}$ | ${ }_{\text {ss }}$ | ${ }_{\text {cs }}$ | ${ }_{\text {Is }}$ | ${ }_{8}$ | + | ${ }^{1}$ | ${ }_{9}$ |  |  |  |  |
|  | $\begin{gathered} \text { onol } \\ \text { not } \end{gathered}$ | $\begin{aligned} & \text { ool } \\ & \text { ool } \end{aligned}$ | coi | 001 | ${ }^{000}$ | ool | $\begin{gathered} 001 \\ \substack{0} \\ y_{1} \end{gathered}$ | $\begin{gathered} { }_{\tau}^{\imath 9} 9 \end{gathered}$ | 19 | ${ }_{65}^{15}$ | ${ }_{85}^{L s}$ | $\begin{aligned} & 95 \\ & { }_{9} \end{aligned}$ | $\underbrace{\text { ct }}_{\substack{85 \\ 15}}$ | ${ }_{\text {ct }}^{\substack{6+\\ \text { os }}}$ | $\left.\right\|_{\mathrm{st}} ^{\mathrm{tr}}$ | ${ }_{\\| t}$ | $\underset{\substack{9 \varepsilon \\ \S}}{\substack{\text { n }}}$ |  |  |  |  |
|  | ${ }^{001}$ | Oor | ${ }^{2001}$ | ( | 01 | L9 | ¢9 | ${ }_{¢ 9}$ | z9 | ${ }_{19}^{19}$ | ${ }_{0}$ | ${ }_{65}$ | ${ }_{9}$ | ${ }_{\text {is }}$ | st | ${ }_{\text {It }}$ |  |  |  |  |  |
| 00I | 001 | 001 | 001 | 001 | , | 8 | $\stackrel{+9}{ }$ | ¢ | ${ }^{29}$ | 19 | 19 | 19 | ${ }^{4}$ | ${ }^{\text {cs }}$ | 4 |  | ¢ |  |  |  |  |
| $0100$ |  | 00 | 001 | 9 | od | 69 | 9 | $9$ | 2 | 29 | 19 | 19 | Ls | ¢s | ${ }_{4 t}$ | it | ${ }_{\text {sc }}$ |  |  |  |  |
|  | 00I | $001$ | ${ }^{88}$ | ${ }^{8}$ | z | $\approx L$ | 89 | $99$ | s9 | 9 | ${ }^{2}$ | 19 | ${ }^{5}$ | 15 | 4 | it | $\begin{aligned} & 96 \\ & 98 \\ & 98 \end{aligned}$ |  |  |  |  |
|  | 001 | ${ }^{68}$ | ${ }_{88}$ | ${ }^{8 L}$ | \&L | ¢ | 89 | 89 | ${ }^{99}$ | 59 | ${ }^{29}$ | 19 | $\stackrel{9}{9}$ | ${ }^{15}$ | st | t | ${ }_{9}$ |  | z |  |  |
|  | 56 | 0 | ${ }^{\text {+8 }}$ | 6 | +1 | sL | z | z |  | 9 | ¢9 | 19 |  |  | ${ }_{9 t}$ | ${ }^{1+}$ | ${ }_{8 \varepsilon}$ |  |  |  |  |
| oor |  | 06 | 58 | 08 | SL | sL | z | un | 69 | 2 | $\begin{gathered} \xi_{9} \\ { }_{9} \end{gathered}$ | 19 | ss | ${ }^{2 s}$ | ${ }^{4 t}$ | ${ }_{\text {¢ }}$ | d |  |  |  |  |
|  |  | 16 <br> 16 <br> 16 | $\begin{aligned} & 98 \\ & 98 \end{aligned}$ | ${ }_{28}^{78}$ | L | $\stackrel{s L}{L}$ | ${ }_{1}^{2 L}$ | ${ }_{6}^{12}$ | 89 |  | ${ }_{\text {¢ }}$ | ${ }_{19}^{19}$ | $\stackrel{15}{15}$ | cs | ${ }_{6 t}^{6 t}$ |  | ${ }_{\text {it }}^{\text {it }}$ |  | sz |  |  |
|  |  |  |  |  |  |  |  |  |  |  | ¢9 |  |  | ts |  |  |  |  |  |  |  |
|  | ${ }_{96}^{96}$ |  | ${ }^{18}$ | ${ }_{\text {cos }}^{\substack{88}}$ |  |  |  | ${ }_{89}^{89}$ | L9 | 99 | 99 | ${ }_{\text {co }}$ | ${ }^{65}$ | ¢s | d | ${ }^{6+}$ | ${ }_{\text {t }}^{+}$ |  |  |  |  |
| $\begin{aligned} & \text { oou } \\ & \text { oor } \end{aligned}$ | $\begin{aligned} & 96 \\ & { }_{56}^{96} \end{aligned}$ | 16 | ${ }_{98}^{28}$ | ${ }_{28}^{88}$ | $\left.\right\|_{\mu 4} ^{8 L}$ | SL | ${ }_{69}$ | $\begin{aligned} & { }^{89} 98 \\ & \hline 9 \end{aligned}$ |  | ${ }_{99}$ |  | $\begin{aligned} & \varepsilon_{9}^{〔} \\ & 99 \end{aligned}$ | $\begin{aligned} & 19 \\ & 19 \end{aligned}$ |  | $\left.\right\|_{\mathrm{ss}} ^{\mathrm{ss}}$ | $\begin{aligned} & 0 \leq \\ & 15 \\ & \hline \end{aligned}$ | $\begin{gathered} \text { st } \\ \stackrel{s t}{ } \end{gathered}$ |  |  |  | ${ }_{\text {t }}$ |
|  | 56 |  | ${ }_{58}$ | 08 |  |  | 0 | 89 |  | ${ }_{89}$ |  | ${ }_{59}$ |  |  | crss | ${ }^{5}$ | ${ }_{\text {st }}$ |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Effective: October 2009

| 00 I | 00I | 00I | 00I | 00I | 00I | 00I | 00 I | 001 | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | +¢8 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 00 I | 00I | 00I | 00I | 00I | 00I | 00I | 001 | 001 | 00I | 00I | 00 I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 09 | t8 |
| 00I | 00I | 001 | 00I | 00I | 00I | 00I | 00 I | 001 | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 001 | 09 | 09 | £8 |
| 00 I | 001 | 00I | 00I | 00I | 00I | 00I | 001 | 001 | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 001 | t9 | 09 | 09 | 78 |
| 001 | 001 | 001 | 00I | 001 | 001 | 001 | 001 | 001 | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 89 | t9 | 09 | 09 | 18 |
| 00 I | 00I | 00I | 00I | 00I | 00I | 00I | 00 I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 89 | 89 | t9 | 09 | 09 | 08 |
| 00 I | 001 | 00I | 00I | 00I | 00I | 00I | 001 | 001 | 00I | 00I | 00I | 00I | 00I | UL | 89 | 89 | t9 | 09 | 09 | 64 |
| 00 I | 00I | 00I | 00I | 00I | 00I | 00I | 001 | 001 | 00I | 00I | 001 | 00I | SL | UL | 89 | 89 | t9 | 09 | 09 | $8 L$ |
| 00 I | 001 | 00I | 00I | 00I | 00I | 00I | 00 I | 001 | 00I | 00I | 00I | ¢ $L$ | S $\angle$ | UL | 89 | 89 | t9 | 09 | 09 | $\angle L$ |
| 00 I | 001 | 00I | 00I | 00I | 001 | 001 | 001 | 001 | 00I | 001 | 08 | SL | SL | UL | 89 | 89 | t9 | 09 | 09 | $9 L$ |
| 00 I | 00I | 00I | 00I | 00I | 00I | 00I | 00 I | 00I | 00I | 08 | 08 | SL | S $L$ | ZL | 89 | 89 | t9 | 09 | 09 | SL |
| 00 I | 001 | 00I | 00I | 00I | 00I | 00I | 001 | 001 | 00I | 08 | 08 | SL | SL | IL | 89 | 89 | t9 | 09 | 09 | $t<$ |
| 00 I | 001 | 00I | 00I | 00I | 00I | 00I | 00I | 001 | 00I | 08 | 08 | SL | SL | UL | 89 | 89 | t9 | 09 | 09 | $\mathcal{E} L$ |
| 00 I | 001 | 001 | 00I | 00I | 00I | 001 | 001 | 001 | 00I | 08 | 08 | SL | SL | UL | 89 | 89 | t9 | 09 | 09 | ZL |
| 00I | 001 | 001 | 00I | 00I | 00I | 001 | 00I | 001 | 00I | 08 | 08 | SL | S $L$ | UL | 89 | 89 | t9 | 09 | 09 | IL |
| +0z | 61 | 8I | LI | 9I | SI | †I | $\varepsilon$ £ | ZI | II | 0I | 6 | 8 | $L$ | 9 | ¢ | t | $\varepsilon$ | $\tau$ | I | ${ }^{26} \mathrm{~V}$ |
| uoupexnt ${ }_{\text {a }}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



| 00I | 26 | †8 | 92 | 89 | 09 | 6S | 6S | 6S | 09 | 6S | 6S | LS | 9S | ts | OS | St | $6 \varepsilon$ | ¢ $\varepsilon$ | 82 | 0t |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 00 I | 26 | ャ8 | LL | 69 | 19 | 09 | 65 | 09 | 09 | 6 S | 09 | 8S | LS | ts | OS | St | $6 \varepsilon$ | $\bigcirc \mathcal{¢}$ | $0 \varepsilon$ | $6 \varepsilon$ |
| 00I | 26 | †8 | LL | 69 | 19 | 29 | 19 | 19 | 19 | 09 | 09 | 8S | LS | tS | OS | $\stackrel{\text { St }}{ }$ | $6 \varepsilon$ | LE | て£ | $8 \varepsilon$ |
| 00I | ع6 | S8 | $8 L$ | 02 | \＆9 | 29 | 19 | 29 | 29 | 09 | 6 S | 8S | LS | \＆S | $6{ }^{6}$ | tt | It | $9 \varepsilon$ | て£ | LE |
| 00I | ع6 | S8 | 8L | $0 L$ | £9 | t9 | £9 | t9 | $\varepsilon 9$ | 19 | 6 S | 85 | LS | \＆S | $6 t$ | Lt | It | $9 \varepsilon$ | $\varepsilon \varepsilon$ | $9 \varepsilon$ |
| 00I | $\varepsilon 6$ | 98 | $8 L$ | IL | t9 | t9 | t9 | t9 | $\varepsilon 9$ | 19 | 65 | 85 | LS | \＆S | zs | Lt | It | $9 \varepsilon$ | $\varepsilon \varepsilon$ | ¢ $\varepsilon$ |
| 00I | £6 | 98 | $8 L$ | IL | t9 | ¢9 | t9 | ¢9 | $\varepsilon 9$ | 6S | 85 | LS | ¢S | ¢S | ZS | $L t$ | It | $9 \varepsilon$ | $\varepsilon \varepsilon$ | t $\mathcal{E}$ |
| 00I | \＆6 | 98 | $6 L$ | ZL | s9 | ¢9 | ¢9 | £9 | £9 | 6 S | 85 | ¢s | 85 | ¢ऽ | zs | Lt | It | $9 \varepsilon$ | てย | £ |
| 00I | £6 | 98 | $8 L$ | IL | t9 | ¢9 | $\varepsilon 9$ | $\varepsilon 9$ | 29 | 85 | LS | 6 S | 95 | \＆S | IS | St | $0 t$ | $\varsigma \varepsilon$ | て£ | z |
| 00I | ع6 | 98 | 6 L | IL | S9 | ¢9 | £9 | 29 | 29 | 85 | 09 | 85 | ¢¢ | \＆ऽ | IS | 9 t | 0t | $\bigcirc \mathcal{¢}$ | I $\varepsilon$ | İ |
| 00I | \＆6 | 98 | 6 L | ZL | ¢9 | ¢9 | $\varepsilon 9$ | z9 | 29 | 09 | 6 S | 95 | \＆S | ZS | IS | $9+$ | $0+$ | $\varsigma \varepsilon$ | İ | 0ع |
| 00 I | ع6 | S8 | $8 L$ | 02 | £9 | $\varepsilon 9$ | 29 | 19 | เ9 | 6 S | 85 | ¢ऽ | ZS | IS | OS | St | $0 \downarrow$ | $\bigcirc \mathcal{¢}$ | $0 \varepsilon$ | $6 \tau$ |
| 00I | ع6 | S8 | $8 L$ | 02 | £9 | 29 | 19 | $\varepsilon 9$ | $\varepsilon 9$ | 85 | 95 | ES | IS | $6 t$ | Lt | $\varepsilon \downarrow$ | $6 \varepsilon$ | †¢ | $0 \varepsilon$ | 87 |
| 00I | 26 | S8 | LL | 02 | z9 | 29 | t9 | $\varepsilon 9$ | 29 | SS | $\varepsilon \varsigma$ | IS | $6{ }^{1}$ | Lt | $9+$ | $\varepsilon \downarrow$ | $8 \varepsilon$ | †¢ | て£ | $L \tau$ |
| 001 | 26 | ¢8 | LL | $0 L$ | 29 | t9 | $\varepsilon 9$ | 29 | 09 | \＆ऽ | \＆S | OS | $\angle t$ | st | \＆t | It | LE | $\pm \mathcal{L}$ | てع | 97 |
| 00I | \＆6 | 98 | $8 L$ | IL | เ9 | $\varepsilon 9$ | z9 | 09 | 6S | ES | IS | $6 t$ | $9 \downarrow$ | $\varepsilon \downarrow$ | It | 0t | LE | † | て¢ | sz |
| 00I | $\varepsilon 6$ | S8 | $8 L$ | $0 L$ | £9 | z9 | 09 | 65 | 85 | IS | OS | Lt | $9 \downarrow$ | てt | It | 0t | $8 \varepsilon$ | $9 \varepsilon$ | $9 \varepsilon$ | † $\tau$ |
| 00I | 26 | S8 | LL | 02 | 29 | 09 | 85 | LS | 95 | OS | $6 t$ | $9 t$ | tt | てt | It | 0t | $8 \varepsilon$ | It | $8 \varepsilon$ | $\varepsilon \tau$ |
| 001 | 26 | เ8 | 91 | 89 | 09 | 85 | LS | 95 | ts | $6{ }^{6}$ | $6 t$ | St | tt | で | It | It | to | It | $6 \varepsilon$ | $\tau \tau$ |
| 00I | 26 | †8 | SL | L9 | 65 | LS | ts | \＆S | IS | Lt | Lt | tt | てt | てt | It | St | tt | てt | It | 12 |
| 00I | 26 | £8 | SL | 99 | 85 | 9S | \＆S | IS | 0S | St | St | てt | で | で | st | St | St | to | で | $0 \tau$ |
| 00I | ＋6 | 68 | E8 | $8 L$ | ZL | 02 | L9 | L9 | t9 | 09 | 09 | 6S | 6S | ¢9 | £9 | £9 | £9 | 29 | 09 | 61 |
| 00I | L6 | t6 | I6 | 88 | s8 | E8 | z8 | 6 L | 81 | SL | ¢ $\llcorner$ | tL | 18 | 18 | 08 | 08 | 08 | 08 | $8 L$ | 81 |
| 00I | 001 | 00I | 66 | 66 | 66 | L6 | ¢6 | ¢6 | E6 | 26 | 26 | 66 | 66 | 66 | 86 | 86 | 86 | 86 | 96 | LI |
| 00 I | 001 | 001 | 001 | 001 | 00I | 001 | 001 | 001 | 001 | 00I | 001 | 001 | 001 | 001 | 00I | 001 | 001 | 001 | 001 | 91 |
| 001 | 001 | 00I | 00 I | 001 | 00I | 00I | 001 | 001 | 00I | 00I | 001 | 00I | 001 | 001 | 00I | 001 | 00I | 001 | 001 | SI－0 |
| ＋0z | 61 | 8 I | LI | 91 | SI | †I | $\varepsilon 1$ | ZI | II | 0I | 6 | 8 | $L$ | 9 | s | $t$ | $\mathcal{E}$ | $\boldsymbol{z}$ | I | ${ }^{28} \mathrm{~V}$ |
| uope．ina ${ }_{\text {a }}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 08 | 08 | SL | SL | ZL | 89 | 89 | t9 | 09 | 09 | 02 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 08 | 08 | SL | SL | ZL | ZL | ZL | 89 | ¢9 | $\varepsilon I$ | 69 |
| 00I | 00I | 00I | 00I | 00I | 00 I | 00I | 00I | 00I | 00I | 08 | 08 | SL | SL | ZL | ZL | ZL | 89 | 8I | $\mathcal{E}$ | 89 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 08 | 08 | SL | SL | ZL | ZL | ZL | てZ | 6I | SI | $\angle 9$ |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 08 | 08 | SL | SL | ZL | ZL | ¢Z | \＆ | 6I | SI | 99 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 08 | 08 | SL | SL | ZL | 82 | ¢Z | $\varepsilon 乙$ | 6I | SI | ¢9 |
| 00I | 00I | 00I | 00I | 00I | O0I | 00I | 00I | 00I | 00I | 08 | 08 | 08 | 08 | $0 \mathcal{L}$ | 62 | LZ | 七て | IZ | $\dagger \mathrm{I}$ | t9 |
| 00I | 00I | 00I | 00I | 00I | O0I | 00I | 00I | 00I | 00I | 08 | 08 | 08 | $\dagger \mathcal{E}$ | てE | $0 \varepsilon$ | 87 | †て | 02 | 9I | £9 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 08 | 08 | $\bigcirc \mathcal{S}$ | $\dagger \mathcal{L}$ | てE | $0 \varepsilon$ | 87 | ¢て | てZ | 9I | $z 9$ |
| 00I | 00I | 00I | 00I | 00I | O0I | 00I | 00I | 00I | 00I | 08 | $8 \mathcal{8}$ | $9 \mathcal{1}$ | $\bigcirc \mathcal{E}$ | $\varepsilon \varepsilon$ | てย | 62 | SZ | てZ | LI | 19 |
| 00I | 00I | 00I | 00I | 00I | O0I | 00I | 00I | 00I | 00I | 0t | $6 \varepsilon$ | $8 \varepsilon$ | $9 \varepsilon$ | $\dagger \mathcal{L}$ | てE | $0 \mathcal{L}$ | 97 | $\varepsilon \tau$ | LI | 09 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | tt | じ | 0t | $6 \mathcal{L}$ | $8 \mathcal{1}$ | $\bigcirc \mathcal{L}$ | £ย | $0 \mathcal{L}$ | 92 | $\varepsilon 乙$ | LI | 6 S |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | St | St | で | It | It | $8 \mathcal{E}$ | $9 \varepsilon$ | ¢¢ | IE | 97 | $\varepsilon 乙$ | LI | 85 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 97 | St | St | tt | $t t$ | てt | It | $8 \mathcal{E}$ | ¢E | IE | 87 | $\varepsilon \tau$ | 8I | LS |
| 00I | 00I | 00I | 00I | 00I | 00I | $6 t$ | $9 t$ | $9 t$ | $9 t$ | St | tt | tt | で | $6 \varepsilon$ | $9 \varepsilon$ | てE | 87 | $\varepsilon 乙$ | 8I | 95 |
| 00I | 00I | 00I | 00I | 00 I | OS | OS | $\angle t$ | 97 | $9 t$ | St | St | St | $\varepsilon \downarrow$ | It | LE | てE | 87 | $\varepsilon 乙$ | 8I | Ss |
| 00I | 00I | 00I | 00I | I9 | IS | IS | $6 \pm$ | $6 \pm$ | $L \dagger$ | $\angle t$ | $L t$ | St | $\varepsilon \downarrow$ | It | LE | てE | 62 | $\dagger$ ¢ | 8I | ts |
| 00I | 00I | 00I | IL | 29 | IS | ZS | IS | 67 | $6 t$ | $8 t$ | $8 \pm$ | $L t$ | $\varepsilon \downarrow$ | It | LE | てE | 6 \％ | $\dagger 乙$ | 6I | ES |
| 00I | 00I | I8 | ZL | Z9 | £S | SS | IS | IS | OS | OS | 87 | $\angle t$ | tt | It | LE | $\varepsilon \mathcal{E}$ | $0 \mathcal{L}$ | ¢ | 02 | zs |
| 00I | I6 | 28 | $\varepsilon L$ | t9 | SS | SS | $t S$ | $\varepsilon$ E | $\varepsilon \varsigma$ | IS | $6 t$ | $8 \downarrow$ | tr | It | $\angle \varepsilon$ | $\dagger \mathcal{E}$ | $0 \mathcal{L}$ | 97 | IZ | IS |
| 00I | I6 | 28 | $\varepsilon L$ | t9 | SS | 9S | SS | SS | $\dagger$ ¢ | $\varepsilon \varsigma$ | OS | $8 \downarrow$ | カt | It | LE | $\dagger \mathcal{L}$ | てE | $L Z$ | IZ | OS |
| 00I | I6 | 28 | ナL | ¢9 | 95 | $L S$ | SS | SS | $t$ ¢ | $\varepsilon \varsigma$ | 0 S | $8 \downarrow$ | St | で | $6 \varepsilon$ | ¢E | £ย | 62 | $\varepsilon 乙$ | $6 t$ |
| 00I | I6 | E8 | カL | 99 | LS | 6S | SS | SS | $t$ S | $\varepsilon \varsigma$ | OS | 67 | $L t$ | t | 0t | LE | $\varsigma \mathcal{L}$ | $0 \mathcal{1}$ | $\varepsilon 乙$ | $8 t$ |
| 00I | 26 | †8 | 91 | 89 | 09 | 6 S | 95 | SS | $t S$ | $\varepsilon \varsigma$ | IS | 67 | $L t$ | St | で | $6 \varepsilon$ | $\bigcirc \mathcal{S}$ | $0 \mathcal{L}$ | $\dagger$ ¢ | Lt |
| 00I | 26 | †8 | LL | 69 | I9 | 09 | 95 | SS | $\dagger$ S | $\varepsilon \varsigma$ | ZS | IS | $6 t$ | $L t$ | Et | 0t | LE | てE | $\dagger 乙$ | 9t |
| 00I | Z6 | S8 | LL | 02 | て9 | I9 | 9 S | SS | $t S$ | $\varepsilon \varsigma$ | ZS | IS | IS | 8t | St | で | $8 \varepsilon$ | $\varepsilon \mathcal{E}$ | 92 | St |
| 00I | Z6 | ¢8 | LL | 02 | Z9 | 19 | 95 | SS | ¢S | SS | $\dagger \mathrm{c}$ | $\varepsilon \varsigma$ | ZS | OS | $\angle t$ | で | $8 \mathcal{E}$ | $\dagger \mathcal{E}$ | 97 | tt |
| 00I | 26 | †8 | LL | 69 | 19 | 09 | 95 | $L S$ | 9S | S¢ | S¢ | $\varepsilon$ ¢ | $\varepsilon$ ¢ | OS | $\angle t$ | tt | $6 \mathcal{1}$ | $\dagger \mathcal{E}$ | LZ | $\boldsymbol{E}$ |
| 00I | Z6 | †8 | LL | 69 | I9 | 09 | 8S | $L S$ | $L S$ | LS | 95 | SS | $\dagger$ ¢ | ZS | $6 t$ | tt | $6 \mathcal{1}$ | $\bigcirc \mathcal{E}$ | LZ | Z $\dagger$ |
| 00I | 26 | †8 | 9 L | 89 | 09 | 6S | 8S | 6S | 8S | $\angle S$ | 8S | SS | SS | ZS | $6 t$ | St | $6 \mathcal{L}$ | $\bigcirc \mathcal{E}$ | 82 | It |
| ＋02 | 6I | 8I | LI | 9I | SI | †I | $\varepsilon I$ | ZI | II | 0I | 6 | 8 | $L$ | 9 | S | t | $\varepsilon$ | $\boldsymbol{z}$ | I | ${ }^{\text {asin }}$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Effective: October 2009



| 00I | 86 | 96 | £6 | I6 | 68 | 68 | 98 | 98 | 98 | ¢8 | ャ8 | £8 | 18 | LL | IL | 99 | LS | 0S | It | 0t |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 00I | 86 | 96 | t6 | z6 | 06 | 68 | 98 | L8 | 98 | 98 | ¢8 | £8 | 18 | LL | ZL | 99 | LS | OS | St | $6 \varepsilon$ |
| 00I | 86 | 96 | ¢6 | \＆6 | I6 | 06 | 88 | 88 | L8 | 98 | 98 | เ8 | I8 | LL | ZL | 99 | LS | ¢ऽ | Lt | $8 \varepsilon$ |
| 00I | 86 | 96 | ¢6 | E6 | I6 | 26 | 68 | 06 | 68 | 98 | ¢8 | t8 | £8 | $6 L$ | t $\llcorner$ | L9 | 29 | ¢ऽ | $8 t$ | $\angle \varepsilon$ |
| 00I | 86 | L6 | ¢6 | t6 | 26 | E6 | 16 | 06 | 06 | 98 | ¢8 | t8 | E8 | 6 L | t $L$ | IL | z9 | 95 | 6 t | $9 \varepsilon$ |
| 00I | 66 | L6 | 96 | t6 | £6 | E6 | I6 | I6 | 06 | 98 | ¢8 | t8 | £8 | 6 L | $8 L$ | IL | て9 | 95 | IS | ¢ $\varepsilon$ |
| 00I | 66 | L6 | 96 | †6 | £6 | ¢6 | 26 | 26 | 06 | 98 | ¢8 | £8 | 18 | 28 | $8 L$ | IL | 29 | 95 | IS | † $\mathcal{E}$ |
| 00I | 66 | L6 | 96 | ＋6 | £6 | E6 | \＆6 | 26 | 06 | ¢8 | ャ8 | £8 | ¢8 | 28 | $8 L$ | IL | 29 | LS | IS | £ |
| 00I | 66 | L6 | 96 | ＋6 | £6 | t6 | 26 | 06 | 06 | ¢8 | †8 | 98 | ¢8 | 18 | $8 L$ | IL | t9 | 95 | IS | z $\varepsilon$ |
| 001 | 66 | L6 | 96 | ＋6 | £6 | E6 | 26 | 06 | 06 | ゅ8 | 88 | t8 | ＋8 | 18 | $8 L$ | ZL | t9 | 95 | IS | İ |
| 00I | 66 | L6 | 96 | ＋6 | £6 | E6 | 26 | 06 | 06 | 68 | 88 | ¢8 | 28 | 6 L | $6 L$ | ZL | t9 | 95 | IS | 0¢ |
| 00I | 86 | L6 | ¢6 | t6 | 26 | 26 | 06 | 06 | ¢6 | 88 | 98 | t8 | 18 | $8 L$ | $8 L$ | IL | t9 | 95 | IS | $6 z$ |
| 00I | 86 | L6 | ¢6 | t6 | 26 | 26 | 06 | ¢6 | ¢6 | 98 | ¢8 | 28 | 6 L | LL | SL | IL | t9 | 95 | ZS | 87 |
| 00I | 86 | 96 | t6 | 26 | 06 | 06 | ¢6 | ¢6 | E6 | t8 | 28 | 18 | $8 L$ | tL | tL | 02 | $\varepsilon 9$ | 95 | zs | $\angle \tau$ |
| 001 | 86 | 96 | ＋6 | 26 | 06 | 96 | ¢6 | £6 | ع6 | 28 | 28 | 62 | SL | IL | IL | 69 | $\varepsilon 9$ | 85 | $\varepsilon \varsigma$ | 97 |
| 00I | 66 | 86 | L6 | 96 | S6 | ¢6 | E6 | £6 | 26 | 28 | 18 | $8 L$ | tL | 02 | 69 | L9 | £9 | 8S | \＆S | sz |
| 00I | 66 | L6 | 96 | t6 | £6 | E6 | Z6 | 06 | 26 | 18 | 62 | LL | tL | 02 | 02 | 69 | t9 | 09 | 29 | $\dagger \tau$ |
| 00I | 86 | L6 | ¢6 | ＋6 | z6 | 26 | 06 | 06 | 68 | 18 | $6 L$ | LL | $\varepsilon L$ | 02 | 02 | 02 | L9 | 69 | ¢9 | $\mathfrak{\varepsilon z}$ |
| 00I | 86 | L6 | ¢6 | t6 | 26 | 68 | 68 | 06 | 88 | 62 | 8L | tL | $\varepsilon L$ | IL | IL | $0 L$ | $\bigcirc \mathcal{L}$ | IL | 89 | $\tau \tau$ |
| 001 | 86 | 96 | t6 | 26 | 06 | 68 | 88 | 98 | ¢8 | 62 | LL | tL | $\varepsilon L$ | IL | IL | $8 L$ | 8L | tL | IL | 12 |
| 00I | 86 | 96 | t6 | 26 | 06 | 88 | 98 | £8 | \＆8 | LL | ¢ $L$ | $\varepsilon L$ | $\varepsilon L$ | $\varepsilon L$ | 08 | 08 | 08 | LL | tL | $0 z$ |
| 00I | 001 | 001 | 66 | 66 | 66 | 96 | ¢6 | E6 | 26 | 98 | 98 | t8 | เ8 | 26 | 26 | Z6 | 26 | 68 | L8 | 61 |
| 00I | 00I | 001 | 001 | 00I | 00I | 00I | 00I | 00I | 001 | L6 | 96 | ¢6 | 00I | 001 | 00I | 00I | 00I | 001 | 66 | 81 |
| 00I | 001 | 00I | 001 | 00I | 001 | 001 | 001 | 001 | 001 | 00I | 001 | 00I | 00I | 001 | 00I | 001 | 001 | 00I | 001 | LI |
| 001 | 001 | 00I | 001 | 00I | 00I | 001 | 001 | 00I | 001 | 00I | 00I | 00I | 00I | 001 | 00I | 00I | 001 | 001 | 001 | 91 |
| 001 | 001 | 00I | 001 | 00I | 00I | 00I | 001 | 00 I | 00I | 00I | 001 | 00I | 00I | 001 | 00I | 001 | 001 | 00I | 001 | SI－0 |
| ＋0z | 61 | 8I | LI | 9I | SI | tI | $\varepsilon$ \＆ | ZI | II | 01 | 6 | 8 | $L$ | 9 | S | $t$ | $\varepsilon$ | $\tau$ | I | ${ }^{\circ 8 \mathrm{E}} \mathrm{V}$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

9 ग१Ре

| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 08 | 08 | SL | SL | ZL | 89 | 89 | t9 | 09 | 09 | 02 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 08 | 08 | SL | SL | ZL | ZL | ZL | 89 | ャ9 | $\dagger 乙$ | 69 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 08 | 08 | SL | SL | ZL | ZL | ZL | 89 | て\＆ | $\dagger$ ¢ | 89 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 08 | 08 | SL | SL | ZL | ZL | ZL | $6 \mathcal{1}$ | てE | $\dagger$ ¢ | $\angle 9$ |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 08 | 08 | SL | SL | てL | ZL | tt | $6 \varepsilon$ | てع | $\dagger て$ | 99 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 08 | 08 | SL | SL | てL | 6t | tt | $6 \varepsilon$ | て£ | $\dagger$ ¢ | ¢9 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 08 | 08 | 08 | 08 | $\varepsilon \varsigma$ | OS | St | 0t | $\varepsilon \varepsilon$ | ¢Z | t9 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 08 | 08 | 08 | LS | ¢S | IS | $9 \downarrow$ | It | $\varepsilon \varepsilon$ | ¢Z | $\varepsilon 9$ |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 08 | 08 | 29 | 8S | ¢S | IS | $L t$ | It | $\varepsilon \varepsilon$ | 97 | z9 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 08 | 99 | \＆9 | 6 S | 9S | IS | $8 \downarrow$ | で | $\bigcirc \mathcal{S}$ | 92 | I9 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 69 | L9 | 59 | I9 | LS | £ऽ | $6 \downarrow$ | $\varepsilon \downarrow$ | $9 \varepsilon$ | 87 | 09 |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 9 L | 02 | 89 | L9 | $\varepsilon 9$ | LS | $\dagger ¢$ | $6 t$ | $\varepsilon \downarrow$ | $9 \varepsilon$ | 8 8 | 6 S |
| 00I | 00I | 00I | 00I | 00I | 00I | 00I | 00I | 8L | 9 L | ZL | 69 | 89 | $\varepsilon 9$ | 6S | ¢ऽ | $6 t$ | $\varepsilon \downarrow$ | $9 \varepsilon$ | 87 | 8S |
| 00I | 00I | 00I | 00I | 00I | 00 I | 00I | 6 L | 8L | 9 L | $\varepsilon L$ | ZL | 69 | 99 | 19 | SS | $6 \pm$ | で | $\bigcirc \mathcal{S}$ | 9 9 | LS |
| 00I | 00I | 00I | 00I | 00I | 00I | S8 | 6 L | 8L | 9 L | $\dagger L$ | ZL | IL | L9 | Z9 | 95 | $6 t$ | で | $\bigcirc \mathcal{S}$ | 97 | 9S |
| 00I | 00I | 00I | 00I | 00I | L8 | 98 | 6 L | 8L | 9 L | †L | $\varepsilon L$ | $\varepsilon L$ | 69 | $\varepsilon 9$ | LS | $6 t$ | で | $\bigcirc \mathcal{C}$ | 9 9 | Sc |
| 00I | 00I | 00I | 00I | I6 | 68 | L8 | I8 | 08 | 8L | SL | カL | $\varepsilon L$ | 69 | £9 | $\angle S$ | $6 t$ | \＆ | $9 \varepsilon$ | 87 | tS |
| 00I | 00I | 00I | E6 | I6 | 68 | 68 | E8 | I8 | 6 L | LL | カL | $\varepsilon L$ | 89 | 29 | LS | $6 \pm$ | $\varepsilon \downarrow$ | LE | 87 | $\varepsilon \subseteq$ |
| 00I | 00I | 96 | †6 | 26 | 06 | 06 | †8 | E8 | I8 | 6 L | SL | tL | 89 | 29 | 95 | OS | St | $8 \varepsilon$ | 62 | ZS |
| 00I | 86 | 96 | ャ6 | 26 | 06 | 06 | ¢8 | ¢8 | \＆8 | 08 | SL | tL | L9 | 19 | 95 | IS | St | $6 \varepsilon$ | $0 \mathcal{L}$ | IS |
| 00I | 86 | 96 | †6 | 26 | 06 | I6 | L8 | L8 | ¢8 | I8 | LL | tL | L9 | I9 | LS | IS | 9 t | It | IE | 0S |
| 00I | 86 | 96 | ¢6 | \＆6 | I6 | 26 | L8 | 98 | †8 | I8 | LL | tL | 89 | $\varepsilon 9$ | 8S | $\varepsilon ¢$ | 8t | てt | $\varepsilon \varepsilon$ | $6 t$ |
| 00I | 86 | L6 | ¢6 | カ6 | Z6 | Z6 | L8 | 98 | †8 | 08 | LL | tL | 69 | †9 | 09 | tS | OS | tt | $\dagger \mathcal{L}$ | $8 t$ |
| 00I | 66 | 86 | 96 | ¢6 | †6 | E6 | 98 | ¢8 | E8 | 08 | LL | SL | OL | 99 | Z9 | LS | IS | 切 | $\dagger \mathcal{L}$ | $L t$ |
| 00I | 66 | 86 | 86 | L6 | 96 | E6 | 98 | ¢8 | \＆8 | 6 L | LL | SL | IL | 89 | £9 | 6S | $\varepsilon$ ¢ | 9 t | $9 \varepsilon$ | 9t |
| 00I | 66 | 66 | 86 | 86 | L6 | t6 | 98 | †8 | I8 | 08 | 8L | 9 L | $\varepsilon L$ | 0 L | ¢9 | I9 | ¢S | Lt | LE | St |
| 00I | 66 | 86 | 86 | L6 | 96 | E6 | 98 | t8 | Z8 | 08 | 08 | 8L | SL | IL | L9 | Z9 | SS | $8 t$ | $6 \varepsilon$ | $t t$ |
| 00I | 66 | L6 | 96 | t6 | E6 | Z6 | ¢8 | t8 | E8 | 28 | 08 | 8L | $9 L$ | $\varepsilon L$ | 69 | \＆9 | SS | $6 t$ | $6 \varepsilon$ | $\boldsymbol{E}$ t |
| 00I | 86 | L6 | ¢6 | ＋6 | Z6 | 06 | 98 | ¢8 | †8 | £8 | 28 | 08 | LL | 七L | 69 | ¢9 | LS | $6 t$ | $0 \downarrow$ | てt |
| 00I | 86 | 96 | 76 | Z6 | 06 | 68 | S8 | 98 | S8 | †8 | £8 | I8 | $6 L$ | 91 | IL | ¢9 | LS | OS | 0t | It |
| ＋0Z | 6I | 8I | LI | 9I | SI | tI | £I | ZI | II | 0I | 6 | 8 | $L$ | 9 | S | $t$ | $\varepsilon$ | $\tau$ | I | ${ }^{\text {¢ }} \mathrm{V}$ |



Appendix

## SELECT MORTALITY FACTORS

Male, Aggregate

| Issue ${ }^{\text {a }}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20+ |
| 0-15 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 16 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 17 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 18 | 96 | 98 | 98 | 99 | 99 | 100 | 100 | 90 | 92 | 92 | 92 | 92 | 93 | 93 | 96 | 97 | 98 | 98 | 99 | 100 |
| 19 | 83 | 84 | 84 | 87 | 87 | 87 | 79 | 79 | 79 | 81 | 81 | 82 | 82 | 82 | 85 | 88 | 91 | 94 | 97 | 100 |
| 20 | 69 | 71 | 71 | 74 | 74 | 69 | 69 | 67 | 69 | 70 | 71 | 71 | 71 | 71 | 74 | 79 | 84 | 90 | 95 | 100 |
| 21 | 66 | 68 | 69 | 71 | 66 | 66 | 67 | 66 | 67 | 70 | 70 | 70 | 70 | 71 | 71 | 77 | 83 | 88 | 94 | 100 |
| 22 | 65 | 66 | 66 | 63 | 63 | 64 | 64 | 64 | 65 | 68 | 68 | 68 | 68 | 69 | 71 | 77 | 83 | 88 | 94 | 100 |
| 23 | 62 | 63 | 59 | 60 | 62 | 62 | 63 | 63 | 64 | 65 | 65 | 67 | 67 | 69 | 70 | 76 | 82 | 88 | 94 | 100 |
| 24 | 60 | 56 | 56 | 59 | 59 | 60 | 61 | 61 | 61 | 64 | 64 | 64 | 66 | 67 | 70 | 76 | 82 | 88 | 94 | 100 |
| 25 | 52 | 53 | 55 | 56 | 58 | 58 | 60 | 60 | 60 | 63 | 62 | 63 | 64 | 67 | 69 | 75 | 81 | 88 | 94 | 100 |
| 26 | 51 | 52 | 55 | 56 | 58 | 58 | 57 | 61 | 61 | 62 | 63 | 64 | 66 | 69 | 66 | 73 | 80 | 86 | 93 | 100 |
| 27 | 51 | 52 | 55 | 57 | 58 | 60 | 61 | 61 | 60 | 63 | 63 | 64 | 67 | 66 | 67 | 74 | 80 | 87 | 93 | 100 |
| 28 | 49 | 51 | 56 | 58 | 60 | 60 | 61 | 62 | 62 | 63 | 64 | 66 | 65 | 66 | 68 | 74 | 81 | 87 | 94 | 100 |
| 29 | 49 | 51 | 56 | 58 | 60 | 61 | 62 | 62 | 62 | 64 | 64 | 62 | 66 | 67 | 70 | 76 | 82 | 88 | 94 | 100 |
| 30 | 49 | 50 | 56 | 58 | 60 | 60 | 62 | 63 | 63 | 64 | 62 | 63 | 67 | 68 | 71 | 77 | 83 | 88 | 94 | 100 |
| 31 | 47 | 50 | 56 | 58 | 60 | 62 | 63 | 64 | 64 | 62 | 63 | 66 | 68 | 70 | 72 | 78 | 83 | 89 | 94 | 100 |
| 32 | 46 | 49 | 56 | 59 | 60 | 62 | 63 | 66 | 62 | 63 | 66 | 67 | 70 | 72 | 73 | 78 | 84 | 89 | 95 | 100 |
| 33 | 43 | 49 | 56 | 59 | 62 | 63 | 64 | 62 | 65 | 66 | 67 | 70 | 72 | 73 | 75 | 80 | 85 | 90 | 95 | 100 |
| 34 | 42 | 47 | 56 | 60 | 62 | 63 | 61 | 63 | 66 | 67 | 70 | 71 | 73 | 75 | 76 | 81 | 86 | 90 | 95 | 100 |
| 35 | 40 | 47 | 56 | 60 | 63 | 61 | 62 | 65 | 67 | 68 | 71 | 73 | 74 | 76 | 76 | 81 | 86 | 90 | 95 | 100 |
| 36 | 38 | 42 | 56 | 60 | 59 | 61 | 63 | 65 | 67 | 68 | 70 | 72 | 74 | 76 | 77 | 82 | 86 | 91 | 95 | 100 |
| 37 | 38 | 45 | 56 | 57 | 61 | 62 | 63 | 65 | 67 | 68 | 70 | 72 | 74 | 76 | 76 | 81 | 86 | 90 | 95 | 100 |
| 38 | 37 | 44 | 53 | 58 | 61 | 62 | 65 | 66 | 67 | 69 | 69 | 73 | 75 | 76 | 77 | 82 | 86 | 91 | 95 | 100 |
| 39 | 37 | 41 | 53 | 58 | 62 | 63 | 65 | 65 | 66 | 68 | 69 | 72 | 74 | 76 | 76 | 81 | 86 | 90 | 95 | 100 |
| 40 | 34 | 40 | 53 | 58 | 62 | 63 | 65 | 65 | 66 | 68 | 68 | 71 | 75 | 76 | 77 | 82 | 86 | 91 | 95 | 100 |


| Issue <br> Age | Male, Aggregate |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20+ |
| 41 | 34 | 41 | 53 | 58 | 62 | 63 | 65 | 64 | 64 | 66 | 68 | 70 | 74 | 76 | 77 | 82 | 86 | 91 | 95 | 100 |
| 42 | 34 | 43 | 53 | 58 | 61 | 62 | 63 | 63 | 63 | 64 | 66 | 69 | 72 | 75 | 77 | 82 | 86 | 91 | 95 | 100 |
| 43 | 34 | 43 | 54 | 59 | 60 | 61 | 63 | 62 | 62 | 64 | 66 | 67 | 72 | 74 | 77 | 82 | 86 | 91 | 95 | 100 |
| 44 | 34 | 44 | 54 | 58 | 59 | 60 | 61 | 60 | 61 | 62 | 64 | 67 | 71 | 74 | 77 | 82 | 86 | 91 | 95 | 100 |
| 45 | 34 | 45 | 53 | 58 | 59 | 60 | 60 | 60 | 59 | 60 | 63 | 66 | 71 | 74 | 77 | 82 | 86 | 91 | 95 | 100 |
| 46 | 31 | 43 | 52 | 56 | 57 | 58 | 59 | 59 | 59 | 60 | 63 | 67 | 71 | 74 | 75 | 80 | 85 | 90 | 95 | 100 |
| 47 | 32 | 42 | 50 | 53 | 55 | 56 | 57 | 58 | 59 | 60 | 65 | 68 | 71 | 74 | 75 | 80 | 85 | 90 | 95 | 100 |
| 48 | 32 | 41 | 47 | 52 | 54 | 56 | 57 | 57 | 57 | 61 | 65 | 68 | 72 | 73 | 74 | 79 | 84 | 90 | 95 | 100 |
| 49 | 30 | 40 | 46 | 49 | 52 | 54 | 55 | 56 | 57 | 61 | 66 | 69 | 72 | 73 | 74 | 79 | 84 | 90 | 95 | 100 |
| 50 | 30 | 38 | 44 | 47 | 51 | 53 | 54 | 56 | 57 | 61 | 66 | 71 | 72 | 73 | 75 | 80 | 85 | 90 | 95 | 100 |
| 51 | 28 | 37 | 42 | 46 | 49 | 53 | 54 | 56 | 57 | 61 | 66 | 71 | 72 | 73 | 75 | 80 | 85 | 90 | 95 | 100 |
| 52 | 28 | 35 | 41 | 45 | 49 | 51 | 54 | 56 | 57 | 61 | 66 | 71 | 72 | 74 | 75 | 80 | 85 | 90 | 100 | 100 |
| 53 | 27 | 35 | 39 | 44 | 48 | 51 | 53 | 55 | 57 | 61 | 67 | 71 | 74 | 75 | 76 | 81 | 86 | 100 | 100 | 100 |
| 54 | 27 | 33 | 38 | 44 | 48 | 50 | 53 | 55 | 57 | 61 | 67 | 72 | 74 | 75 | 76 | 81 | 100 | 100 | 100 | 100 |
| 55 | 25 | 32 | 37 | 43 | 47 | 50 | 53 | 55 | 57 | 61 | 68 | 72 | 74 | 75 | 78 | 100 | 100 | 100 | 100 | 100 |
| 56 | 25 | 32 | 37 | 43 | 47 | 49 | 51 | 54 | 56 | 61 | 67 | 70 | 73 | 74 | 100 | 100 | 100 | 100 | 100 | 100 |
| 57 | 24 | 31 | 38 | 43 | 47 | 49 | 51 | 54 | 56 | 59 | 66 | 69 | 72 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 58 | 24 | 31 | 38 | 43 | 48 | 48 | 50 | 53 | 56 | 59 | 64 | 67 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 59 | 23 | 30 | 39 | 43 | 48 | 48 | 51 | 53 | 55 | 58 | 63 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 60 | 23 | 30 | 39 | 43 | 48 | 47 | 50 | 52 | 53 | 57 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 61 | 23 | 30 | 39 | 43 | 49 | 49 | 50 | 52 | 53 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 62 | 23 | 30 | 39 | 44 | 49 | 49 | 51 | 52 | 75 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 63 | 22 | 30 | 39 | 45 | 50 | 50 | 52 | 75 | 75 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 64 | 22 | 30 | 39 | 45 | 50 | 51 | 75 | 75 | 75 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 65 | 22 | 30 | 39 | 45 | 50 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 66 | 22 | 30 | 39 | 45 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 67 | 22 | 30 | 39 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 68 | 23 | 32 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 69 | 23 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 70 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |


| Male, Aggregate |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Issue Duration |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Age | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20+ |
| 71 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 72 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 73 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 74 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 75 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 76 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 77 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 78 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 79 | 48 | 52 | 55 | 60 | 60 | 65 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 80 | 48 | 52 | 55 | 60 | 60 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 81 | 48 | 52 | 55 | 60 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 82 | 48 | 52 | 55 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 83 | 48 | 52 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 84 | 48 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| $85+$ | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |


| Issue Male, Non-SmokerDuration <br> Dur |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20+ |
| 0-15 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 16 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 17 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 18 | 93 | 95 | 96 | 98 | 99 | 100 | 100 | 90 | 92 | 92 | 92 | 92 | 95 | 95 | 96 | 97 | 98 | 98 | 99 | 100 |
| 19 | 80 | 81 | 83 | 86 | 87 | 87 | 79 | 79 | 79 | 81 | 81 | 82 | 83 | 83 | 86 | 89 | 92 | 94 | 97 | 100 |
| 20 | 65 | 68 | 69 | 72 | 74 | 69 | 69 | 67 | 69 | 70 | 71 | 71 | 72 | 72 | 75 | 80 | 85 | 90 | 95 | 100 |
| 21 | 63 | 66 | 68 | 71 | 66 | 66 | 67 | 66 | 67 | 70 | 70 | 70 | 71 | 71 | 73 | 78 | 84 | 89 | 95 | 100 |
| 22 | 62 | 65 | 66 | 62 | 63 | 64 | 64 | 64 | 67 | 68 | 68 | 68 | 70 | 70 | 73 | 78 | 84 | 89 | 95 | 100 |
| 23 | 60 | 62 | 58 | 60 | 62 | 62 | 63 | 63 | 64 | 67 | 68 | 68 | 67 | 69 | 71 | 77 | 83 | 88 | 94 | 100 |
| 24 | 59 | 55 | 56 | 58 | 59 | 60 | 61 | 61 | 63 | 65 | 67 | 66 | 66 | 69 | 71 | 77 | 83 | 88 | 94 | 100 |
| 25 | 52 | 53 | 55 | 56 | 58 | 58 | 60 | 60 | 61 | 64 | 64 | 64 | 64 | 67 | 70 | 76 | 82 | 88 | 94 | 100 |
| 26 | 51 | 53 | 55 | 56 | 58 | 60 | 61 | 61 | 61 | 63 | 64 | 64 | 66 | 69 | 67 | 74 | 80 | 87 | 93 | 100 |
| 27 | 51 | 52 | 55 | 58 | 60 | 60 | 61 | 61 | 62 | 63 | 64 | 66 | 67 | 66 | 67 | 74 | 80 | 87 | 93 | 100 |
| 28 | 49 | 52 | 57 | 58 | 60 | 61 | 63 | 62 | 62 | 64 | 66 | 66 | 63 | 66 | 68 | 74 | 81 | 87 | 94 | 100 |
| 29 | 49 | 51 | 57 | 60 | 61 | 61 | 62 | 62 | 63 | 64 | 66 | 63 | 65 | 67 | 68 | 74 | 81 | 87 | 94 | 100 |
| 30 | 49 | 51 | 57 | 60 | 61 | 62 | 63 | 63 | 63 | 64 | 62 | 63 | 66 | 68 | 70 | 76 | 82 | 88 | 94 | 100 |
| 31 | 47 | 50 | 57 | 60 | 60 | 62 | 63 | 64 | 64 | 62 | 63 | 65 | 67 | 70 | 71 | 77 | 83 | 88 | 94 | 100 |
| 32 | 46 | 50 | 57 | 60 | 62 | 63 | 64 | 64 | 62 | 63 | 65 | 66 | 68 | 71 | 72 | 78 | 83 | 89 | 94 | 100 |
| 33 | 45 | 49 | 56 | 60 | 62 | 63 | 64 | 62 | 63 | 65 | 66 | 68 | 71 | 73 | 74 | 79 | 84 | 90 | 95 | 100 |
| 34 | 43 | 48 | 56 | 62 | 63 | 64 | 62 | 62 | 65 | 66 | 67 | 70 | 72 | 74 | 74 | 79 | 84 | 90 | 95 | 100 |
| 35 | 41 | 47 | 56 | 62 | 63 | 61 | 62 | 63 | 66 | 67 | 68 | 70 | 72 | 74 | 75 | 80 | 85 | 90 | 95 | 100 |
| 36 | 40 | 47 | 56 | 62 | 59 | 61 | 62 | 63 | 66 | 67 | 68 | 70 | 72 | 74 | 75 | 80 | 85 | 90 | 95 | 100 |
| 37 | 38 | 45 | 56 | 58 | 59 | 61 | 62 | 63 | 66 | 67 | 67 | 69 | 71 | 73 | 74 | 79 | 84 | 90 | 95 | 100 |
| 38 | 38 | 45 | 53 | 58 | 61 | 62 | 63 | 65 | 65 | 67 | 68 | 70 | 72 | 74 | 73 | 78 | 84 | 89 | 95 | 100 |
| 39 | 37 | 41 | 53 | 58 | 61 | 62 | 63 | 64 | 65 | 67 | 68 | 70 | 71 | 73 | 73 | 78 | 84 | 89 | 95 | 100 |
| 40 | 34 | 41 | 53 | 58 | 61 | 62 | 63 | 64 | 64 | 66 | 67 | 69 | 71 | 73 | 72 | 78 | 83 | 89 | 94 | 100 |


| Issue $\quad$Male, Non-Smoker <br> Duration |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20+ |
| 41 | 34 | 41 | 53 | 58 | 61 | 61 | 62 | 62 | 63 | 65 | 65 | 67 | 69 | 71 | 71 | 77 | 83 | 88 | 94 | 100 |
| 42 | 34 | 43 | 53 | 58 | 60 | 61 | 62 | 61 | 61 | 63 | 64 | 66 | 67 | 69 | 71 | 77 | 83 | 88 | 94 | 100 |
| 43 | 32 | 43 | 53 | 58 | 60 | 61 | 60 | 60 | 60 | 60 | 62 | 64 | 66 | 68 | 69 | 75 | 81 | 88 | 94 | 100 |
| 44 | 32 | 44 | 52 | 57 | 59 | 60 | 60 | 59 | 59 | 58 | 60 | 62 | 65 | 67 | 69 | 75 | 81 | 88 | 94 | 100 |
| 45 | 32 | 44 | 52 | 57 | 59 | 60 | 59 | 57 | 57 | 57 | 59 | 61 | 63 | 66 | 68 | 74 | 81 | 87 | 94 | 100 |
| 46 | 32 | 42 | 50 | 54 | 56 | 57 | 57 | 56 | 55 | 56 | 59 | 61 | 63 | 65 | 67 | 74 | 80 | 87 | 93 | 100 |
| 47 | 30 | 40 | 48 | 52 | 54 | 55 | 55 | 54 | 54 | 55 | 59 | 61 | 62 | 63 | 66 | 73 | 80 | 86 | 93 | 100 |
| 48 | 30 | 40 | 46 | 49 | 51 | 52 | 53 | 53 | 54 | 55 | 57 | 61 | 62 | 63 | 63 | 70 | 78 | 85 | 93 | 100 |
| 49 | 29 | 39 | 43 | 48 | 50 | 51 | 50 | 51 | 53 | 54 | 57 | 61 | 61 | 62 | 62 | 70 | 77 | 85 | 92 | 100 |
| 50 | 29 | 37 | 42 | 45 | 47 | 48 | 49 | 50 | 51 | 54 | 57 | 61 | 61 | 61 | 61 | 69 | 77 | 84 | 92 | 100 |
| 51 | 27 | 35 | 40 | 43 | 45 | 47 | 48 | 50 | 51 | 53 | 57 | 60 | 61 | 61 | 62 | 70 | 77 | 85 | 92 | 100 |
| 52 | 27 | 34 | 39 | 42 | 44 | 45 | 48 | 49 | 50 | 53 | 56 | 60 | 60 | 62 | 62 | 70 | 77 | 85 | 100 | 100 |
| 53 | 25 | 31 | 37 | 41 | 44 | 45 | 47 | 49 | 50 | 51 | 56 | 59 | 61 | 61 | 62 | 70 | 77 | 100 | 100 | 100 |
| 54 | 25 | 30 | 36 | 39 | 43 | 44 | 47 | 48 | 49 | 51 | 55 | 59 | 59 | 61 | 62 | 70 | 100 | 100 | 100 | 100 |
| 55 | 24 | 29 | 35 | 38 | 42 | 43 | 45 | 48 | 49 | 50 | 56 | 58 | 59 | 61 | 62 | 100 | 100 | 100 | 100 | 100 |
| 56 | 23 | 29 | 35 | 38 | 42 | 42 | 44 | 47 | 48 | 50 | 55 | 57 | 58 | 59 | 100 | 100 | 100 | 100 | 100 | 100 |
| 57 | 23 | 28 | 35 | 38 | 42 | 42 | 43 | 45 | 47 | 49 | 53 | 55 | 56 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 58 | 22 | 28 | 33 | 37 | 41 | 41 | 43 | 45 | 45 | 47 | 51 | 53 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 59 | 22 | 26 | 33 | 37 | 41 | 41 | 42 | 44 | 44 | 46 | 50 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 60 | 20 | 26 | 33 | 37 | 41 | 40 | 41 | 42 | 42 | 45 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 61 | 20 | 26 | 33 | 37 | 41 | 40 | 41 | 42 | 42 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 62 | 19 | 25 | 32 | 38 | 40 | 40 | 41 | 42 | 75 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 63 | 19 | 25 | 33 | 36 | 40 | 40 | 41 | 75 | 75 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 64 | 18 | 24 | 32 | 36 | 39 | 40 | 75 | 75 | 75 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 65 | 18 | 24 | 32 | 36 | 39 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 66 | 18 | 24 | 32 | 36 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 67 | 18 | 24 | 32 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 68 | 18 | 24 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 69 | 18 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 70 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |


| Issue $\quad$ Male, Non-Smoker $\begin{gathered}\text { Duration }\end{gathered}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20+ |
| 71 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 72 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 73 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 74 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 75 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 76 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 77 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 78 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 79 | 48 | 52 | 55 | 60 | 60 | 65 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 80 | 48 | 52 | 55 | 60 | 60 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 81 | 48 | 52 | 55 | 60 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 82 | 48 | 52 | 55 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 83 | 48 | 52 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 84 | 48 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 85+ | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |


| Male, Smoker |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Issue ${ }^{\text {a }}$ Duration |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Age | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20+ |
| 0-15 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 16 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 17 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 18 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 19 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 20 | 98 | 100 | 100 | 100 | 100 | 100 | 100 | 99 | 99 | 99 | 100 | 99 | 99 | 99 | 100 | 100 | 100 | 100 | 100 | 100 |
| 21 | 95 | 98 | 99 | 100 | 95 | 96 | 96 | 95 | 96 | 97 | 97 | 96 | 96 | 96 | 96 | 97 | 98 | 98 | 99 | 100 |
| 22 | 92 | 95 | 96 | 90 | 90 | 93 | 93 | 92 | 93 | 95 | 95 | 93 | 93 | 92 | 93 | 94 | 96 | 97 | 99 | 100 |
| 23 | 90 | 92 | 85 | 88 | 88 | 89 | 89 | 89 | 90 | 90 | 90 | 90 | 89 | 90 | 92 | 94 | 95 | 97 | 98 | 100 |
| 24 | 87 | 81 | 82 | 85 | 84 | 86 | 88 | 86 | 86 | 88 | 88 | 86 | 86 | 88 | 89 | 91 | 93 | 96 | 98 | 100 |
| 25 | 77 | 78 | 79 | 82 | 81 | 83 | 83 | 82 | 83 | 85 | 84 | 84 | 84 | 85 | 86 | 89 | 92 | 94 | 97 | 100 |
| 26 | 75 | 77 | 79 | 82 | 82 | 83 | 83 | 82 | 83 | 84 | 84 | 84 | 84 | 85 | 81 | 85 | 89 | 92 | 96 | 100 |
| 27 | 73 | 75 | 78 | 82 | 82 | 83 | 83 | 82 | 82 | 82 | 82 | 84 | 84 | 80 | 81 | 85 | 89 | 92 | 96 | 100 |
| 28 | 71 | 73 | 79 | 82 | 81 | 82 | 83 | 81 | 81 | 82 | 82 | 82 | 80 | 80 | 81 | 85 | 89 | 92 | 96 | 100 |
| 29 | 69 | 72 | 78 | 81 | 81 | 82 | 82 | 81 | 81 | 81 | 81 | 77 | 80 | 80 | 81 | 85 | 89 | 92 | 96 | 100 |
| 30 | 68 | 71 | 78 | 81 | 81 | 81 | 82 | 81 | 81 | 81 | 76 | 77 | 80 | 80 | 81 | 85 | 89 | 92 | 96 | 100 |
| 31 | 65 | 70 | 77 | 81 | 79 | 81 | 82 | 81 | 81 | 76 | 77 | 79 | 81 | 81 | 83 | 86 | 90 | 93 | 97 | 100 |
| 32 | 63 | 67 | 77 | 78 | 79 | 81 | 81 | 81 | 76 | 77 | 77 | 80 | 83 | 83 | 85 | 88 | 91 | 94 | 97 | 100 |
| 33 | 60 | 65 | 74 | 78 | 79 | 79 | 81 | 76 | 77 | 77 | 79 | 80 | 83 | 85 | 85 | 88 | 91 | 94 | 97 | 100 |
| 34 | 57 | 62 | 74 | 77 | 79 | 79 | 75 | 76 | 77 | 79 | 79 | 81 | 83 | 85 | 87 | 90 | 92 | 95 | 97 | 100 |
| 35 | 53 | 60 | 73 | 77 | 79 | 75 | 75 | 76 | 77 | 79 | 80 | 82 | 84 | 86 | 88 | 90 | 93 | 95 | 98 | 100 |
| 36 | 52 | 59 | 71 | 75 | 74 | 75 | 75 | 76 | 77 | 79 | 79 | 81 | 83 | 85 | 87 | 90 | 92 | 95 | 97 | 100 |
| 37 | 49 | 58 | 70 | 71 | 74 | 74 | 75 | 76 | 77 | 78 | 79 | 81 | 84 | 86 | 86 | 89 | 92 | 94 | 97 | 100 |
| 38 | 48 | 55 | 66 | 70 | 72 | 74 | 74 | 75 | 76 | 78 | 79 | 81 | 83 | 85 | 87 | 90 | 92 | 95 | 97 | 100 |
| 39 | 45 | 50 | 65 | 70 | 72 | 72 | 74 | 74 | 75 | 77 | 79 | 81 | 84 | 86 | 86 | 89 | 92 | 94 | 97 | 100 |
| 40 | 41 | 49 | 63 | 68 | 71 | 72 | 73 | 74 | 74 | 76 | 78 | 80 | 83 | 85 | 86 | 89 | 92 | 94 | 97 | 100 |


| Male, Smoker |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Issue |  | Duration |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Age | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20+ |
| 41 | 40 | 49 | 63 | 68 | 71 | 72 | 72 | 72 | 73 | 75 | 76 | 78 | 81 | 84 | 85 | 88 | 91 | 94 | 97 | 100 |
| 42 | 40 | 49 | 62 | 68 | 70 | 71 | 71 | 71 | 71 | 73 | 75 | 76 | 81 | 83 | 85 | 88 | 91 | 94 | 97 | 100 |
| 43 | 39 | 50 | 62 | 67 | 69 | 69 | 70 | 70 | 70 | 71 | 73 | 76 | 79 | 83 | 85 | 88 | 91 | 94 | 97 | 100 |
| 44 | 39 | 50 | 60 | 66 | 68 | 69 | 68 | 69 | 69 | 69 | 71 | 74 | 79 | 81 | 85 | 88 | 91 | 94 | 97 | 100 |
| 45 | 37 | 50 | 60 | 66 | 68 | 68 | 68 | 67 | 67 | 67 | 69 | 73 | 78 | 81 | 85 | 88 | 91 | 94 | 97 | 100 |
| 46 | 37 | 48 | 58 | 63 | 65 | 67 | 66 | 66 | 66 | 67 | 71 | 74 | 78 | 81 | 84 | 87 | 90 | 94 | 97 | 100 |
| 47 | 36 | 47 | 55 | 61 | 63 | 64 | 64 | 64 | 65 | 67 | 71 | 75 | 79 | 81 | 84 | 87 | 90 | 94 | 97 | 100 |
| 48 | 35 | 46 | 53 | 58 | 60 | 62 | 63 | 63 | 65 | 67 | 72 | 75 | 79 | 81 | 83 | 86 | 90 | 93 | 97 | 100 |
| 49 | 34 | 45 | 51 | 56 | 58 | 59 | 61 | 62 | 63 | 67 | 72 | 77 | 80 | 81 | 83 | 86 | 90 | 93 | 97 | 100 |
| 50 | 34 | 43 | 49 | 53 | 55 | 57 | 60 | 61 | 63 | 67 | 73 | 78 | 80 | 81 | 81 | 85 | 89 | 92 | 96 | 100 |
| 51 | 32 | 42 | 47 | 52 | 55 | 57 | 60 | 61 | 63 | 67 | 73 | 78 | 80 | 83 | 84 | 87 | 90 | 94 | 97 | 100 |
| 52 | 32 | 40 | 46 | 50 | 54 | 56 | 60 | 61 | 63 | 67 | 73 | 78 | 81 | 84 | 85 | 88 | 91 | 94 | 100 | 100 |
| 53 | 30 | 37 | 44 | 49 | 54 | 56 | 59 | 61 | 65 | 67 | 74 | 79 | 83 | 85 | 87 | 90 | 92 | 100 | 100 | 100 |
| 54 | 30 | 36 | 43 | 48 | 53 | 55 | 59 | 61 | 65 | 67 | 74 | 80 | 84 | 85 | 89 | 91 | 100 | 100 | 100 | 100 |
| 55 | 29 | 35 | 42 | 47 | 53 | 55 | 59 | 61 | 65 | 67 | 75 | 80 | 84 | 86 | 90 | 100 | 100 | 100 | 100 | 100 |
| 56 | 28 | 35 | 42 | 47 | 53 | 55 | 57 | 60 | 63 | 68 | 74 | 79 | 83 | 85 | 100 | 100 | 100 | 100 | 100 | 100 |
| 57 | 28 | 35 | 42 | 47 | 53 | 54 | 57 | 60 | 64 | 67 | 74 | 78 | 81 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 58 | 26 | 33 | 43 | 48 | 54 | 54 | 56 | 59 | 63 | 67 | 73 | 78 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 59 | 26 | 33 | 43 | 48 | 54 | 53 | 57 | 59 | 63 | 66 | 73 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 60 | 25 | 33 | 43 | 48 | 54 | 53 | 56 | 58 | 62 | 66 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 61 | 25 | 33 | 43 | 49 | 55 | 55 | 57 | 59 | 63 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 62 | 25 | 33 | 43 | 50 | 56 | 56 | 58 | 61 | 75 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 63 | 24 | 33 | 45 | 51 | 56 | 56 | 59 | 75 | 75 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 64 | 24 | 34 | 45 | 51 | 57 | 57 | 75 | 75 | 75 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 65 | 24 | 34 | 45 | 52 | 57 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 66 | 24 | 35 | 45 | 53 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 67 | 25 | 35 | 45 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 68 | 25 | 36 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 69 | 27 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 70 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |


| Male, Smoker |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Issue ${ }^{\text {a }}$ Dur |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Age | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20+ |
| 71 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 72 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 73 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 74 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 75 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 76 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 77 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 78 | 48 | 52 | 55 | 60 | 60 | 65 | 70 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 79 | 48 | 52 | 55 | 60 | 60 | 65 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 80 | 48 | 52 | 55 | 60 | 60 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 81 | 48 | 52 | 55 | 60 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 82 | 48 | 52 | 55 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 83 | 48 | 52 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 84 | 48 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| $85+$ | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |


| Female, Aggregate |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Issue Duratio |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Age | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20+ |
| 0-15 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 16 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 17 | 99 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 93 | 95 | 96 | 97 | 97 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 18 | 83 | 83 | 84 | 84 | 84 | 84 | 86 | 78 | 78 | 79 | 82 | 84 | 85 | 88 | 88 | 90 | 93 | 95 | 98 | 100 |
| 19 | 65 | 66 | 68 | 68 | 68 | 68 | 63 | 63 | 64 | 66 | 69 | 71 | 72 | 74 | 75 | 80 | 85 | 90 | 95 | 100 |
| 20 | 48 | 50 | 51 | 51 | 51 | 47 | 48 | 48 | 49 | 51 | 56 | 57 | 58 | 61 | 63 | 70 | 78 | 85 | 93 | 100 |
| 21 | 47 | 48 | 50 | 51 | 47 | 47 | 48 | 49 | 51 | 53 | 57 | 60 | 61 | 64 | 64 | 71 | 78 | 86 | 93 | 100 |
| 22 | 44 | 47 | 48 | 45 | 47 | 47 | 48 | 49 | 53 | 54 | 60 | 61 | 63 | 64 | 66 | 73 | 80 | 86 | 93 | 100 |
| 23 | 42 | 45 | 44 | 45 | 47 | 47 | 49 | 51 | 53 | 54 | 61 | 64 | 64 | 67 | 69 | 75 | 81 | 88 | 94 | 100 |
| 24 | 39 | 40 | 42 | 44 | 47 | 47 | 50 | 51 | 54 | 56 | 64 | 64 | 66 | 69 | 70 | 76 | 82 | 88 | 94 | 100 |
| 25 | 34 | 38 | 41 | 44 | 47 | 47 | 50 | 53 | 56 | 57 | 64 | 67 | 69 | 71 | 73 | 78 | 84 | 89 | 95 | 100 |
| 26 | 34 | 38 | 41 | 45 | 49 | 49 | 51 | 56 | 58 | 59 | 66 | 69 | 70 | 73 | 70 | 76 | 82 | 88 | 94 | 100 |
| 27 | 34 | 38 | 41 | 47 | 50 | 51 | 54 | 57 | 59 | 60 | 69 | 70 | 73 | 70 | 71 | 77 | 83 | 88 | 94 | 100 |
| 28 | 34 | 37 | 43 | 47 | 53 | 53 | 56 | 59 | 62 | 63 | 70 | 73 | 70 | 72 | 74 | 79 | 84 | 90 | 95 | 100 |
| 29 | 34 | 38 | 43 | 49 | 54 | 56 | 58 | 60 | 63 | 64 | 73 | 70 | 72 | 74 | 75 | 80 | 85 | 90 | 95 | 100 |
| 30 | 35 | 38 | 43 | 50 | 56 | 56 | 59 | 63 | 66 | 67 | 70 | 71 | 74 | 75 | 76 | 81 | 86 | 90 | 95 | 100 |
| 31 | 35 | 38 | 43 | 51 | 56 | 58 | 60 | 64 | 67 | 65 | 71 | 72 | 74 | 75 | 76 | 81 | 86 | 90 | 95 | 100 |
| 32 | 35 | 39 | 45 | 51 | 56 | 59 | 63 | 66 | 65 | 66 | 72 | 72 | 75 | 76 | 76 | 81 | 86 | 90 | 95 | 100 |
| 33 | 36 | 39 | 44 | 52 | 58 | 62 | 64 | 65 | 66 | 67 | 72 | 74 | 75 | 76 | 76 | 81 | 86 | 90 | 95 | 100 |
| 34 | 36 | 40 | 45 | 52 | 58 | 63 | 63 | 66 | 67 | 68 | 74 | 74 | 76 | 76 | 76 | 81 | 86 | 90 | 95 | 100 |
| 35 | 36 | 40 | 45 | 53 | 59 | 61 | 65 | 67 | 68 | 70 | 75 | 74 | 75 | 76 | 75 | 80 | 85 | 90 | 95 | 100 |
| 36 | 36 | 40 | 45 | 53 | 55 | 62 | 65 | 67 | 68 | 70 | 74 | 74 | 74 | 75 | 75 | 80 | 85 | 90 | 95 | 100 |
| 37 | 36 | 41 | 47 | 52 | 57 | 62 | 65 | 67 | 68 | 69 | 72 | 72 | 73 | 75 | 74 | 79 | 84 | 90 | 95 | 100 |
| 38 | 34 | 41 | 44 | 52 | 57 | 63 | 66 | 68 | 69 | 70 | 72 | 71 | 72 | 74 | 75 | 80 | 85 | 90 | 95 | 100 |
| 39 | 34 | 40 | 45 | 53 | 58 | 63 | 66 | 68 | 69 | 69 | 70 | 70 | 70 | 73 | 74 | 79 | 84 | 90 | 95 | 100 |
| 40 | 32 | 40 | 45 | 53 | 58 | 65 | 65 | 67 | 68 | 69 | 70 | 69 | 70 | 73 | 73 | 78 | 84 | 89 | 95 | 100 |


| Issue | Female, Aggregate Duration |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20+ |
| 41 | 32 | 40 | 45 | 53 | 57 | 63 | 64 | 67 | 68 | 68 | 69 | 69 | 69 | 73 | 74 | 79 | 84 | 90 | 95 | 100 |
| 42 | 32 | 40 | 45 | 52 | 56 | 61 | 63 | 65 | 66 | 68 | 69 | 68 | 70 | 74 | 75 | 80 | 85 | 90 | 95 | 100 |
| 43 | 31 | 39 | 45 | 51 | 55 | 59 | 61 | 65 | 65 | 66 | 68 | 69 | 69 | 74 | 77 | 82 | 86 | 91 | 95 | 100 |
| 44 | 31 | 39 | 45 | 50 | 54 | 58 | 61 | 63 | 64 | 66 | 67 | 68 | 71 | 75 | 78 | 82 | 87 | 91 | 96 | 100 |
| 45 | 31 | 38 | 44 | 49 | 53 | 56 | 59 | 62 | 63 | 65 | 67 | 68 | 71 | 77 | 79 | 83 | 87 | 92 | 96 | 100 |
| 46 | 29 | 37 | 43 | 48 | 51 | 54 | 59 | 62 | 63 | 65 | 67 | 69 | 71 | 77 | 78 | 82 | 87 | 91 | 96 | 100 |
| 47 | 28 | 35 | 41 | 46 | 49 | 54 | 57 | 61 | 62 | 66 | 68 | 69 | 71 | 77 | 77 | 82 | 86 | 91 | 95 | 100 |
| 48 | 28 | 35 | 41 | 44 | 49 | 52 | 57 | 61 | 63 | 66 | 68 | 71 | 72 | 75 | 77 | 82 | 86 | 91 | 95 | 100 |
| 49 | 26 | 34 | 39 | 43 | 47 | 52 | 55 | 61 | 63 | 67 | 69 | 71 | 72 | 75 | 75 | 80 | 85 | 90 | 95 | 100 |
| 50 | 25 | 32 | 38 | 41 | 46 | 50 | 55 | 61 | 63 | 67 | 69 | 72 | 72 | 75 | 74 | 79 | 84 | 90 | 95 | 100 |
| 51 | 25 | 32 | 38 | 41 | 45 | 50 | 55 | 61 | 63 | 66 | 68 | 69 | 71 | 74 | 74 | 79 | 84 | 90 | 95 | 100 |
| 52 | 23 | 30 | 36 | 41 | 45 | 51 | 56 | 61 | 62 | 65 | 66 | 68 | 68 | 73 | 73 | 78 | 84 | 89 | 100 | 100 |
| 53 | 23 | 30 | 36 | 41 | 47 | 51 | 56 | 61 | 62 | 63 | 65 | 66 | 68 | 72 | 72 | 78 | 83 | 100 | 100 | 100 |
| 54 | 22 | 29 | 35 | 41 | 47 | 53 | 57 | 61 | 61 | 62 | 62 | 66 | 66 | 69 | 70 | 76 | 100 | 100 | 100 | 100 |
| 55 | 22 | 29 | 35 | 41 | 47 | 53 | 57 | 61 | 61 | 61 | 62 | 63 | 64 | 68 | 69 | 100 | 100 | 100 | 100 | 100 |
| 56 | 22 | 29 | 35 | 41 | 45 | 51 | 56 | 59 | 60 | 61 | 62 | 63 | 64 | 67 | 100 | 100 | 100 | 100 | 100 | 100 |
| 57 | 22 | 29 | 35 | 41 | 45 | 50 | 54 | 56 | 58 | 59 | 61 | 62 | 63 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 58 | 22 | 30 | 36 | 41 | 44 | 49 | 53 | 56 | 57 | 57 | 61 | 62 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 59 | 22 | 30 | 36 | 41 | 44 | 48 | 51 | 53 | 55 | 56 | 59 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 60 | 22 | 30 | 36 | 41 | 43 | 47 | 50 | 51 | 53 | 55 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 61 | 22 | 29 | 35 | 39 | 42 | 46 | 49 | 50 | 52 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 62 | 20 | 28 | 33 | 39 | 41 | 45 | 47 | 49 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 63 | 20 | 28 | 33 | 38 | 41 | 44 | 46 | 80 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 64 | 19 | 27 | 32 | 36 | 40 | 42 | 80 | 80 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 65 | 19 | 25 | 30 | 35 | 39 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 66 | 19 | 25 | 30 | 35 | 72 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 67 | 19 | 25 | 30 | 72 | 72 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 68 | 19 | 25 | 68 | 72 | 72 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 69 | 19 | 64 | 68 | 72 | 72 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 70 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Female, Aggregate |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Issue |  |  |  |  |  |  |  |  |  |  | Duration |  |  |  |  |  |  |  |  |  |
| Age | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20+ |
| 71 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 72 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 73 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 74 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 75 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 76 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 77 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 78 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 79 | 60 | 60 | 64 | 68 | 68 | 72 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 80 | 60 | 60 | 64 | 68 | 68 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 81 | 60 | 60 | 64 | 68 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 82 | 60 | 60 | 64 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 83 | 60 | 60 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 84 | 60 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| $85+$ | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |


| Issue $\quad$Female, Non-Smoker <br> Duration |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20+ |
| 0-15 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 16 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 17 | 96 | 98 | 98 | 98 | 98 | 99 | 99 | 99 | 92 | 92 | 93 | 95 | 95 | 97 | 99 | 99 | 99 | 100 | 100 | 100 |
| 18 | 78 | 80 | 80 | 80 | 80 | 81 | 81 | 74 | 75 | 75 | 78 | 79 | 82 | 83 | 85 | 88 | 91 | 94 | 97 | 100 |
| 19 | 60 | 62 | 63 | 63 | 63 | 65 | 59 | 59 | 60 | 60 | 64 | 67 | 67 | 70 | 72 | 78 | 83 | 89 | 94 | 100 |
| 20 | 42 | 44 | 45 | 45 | 45 | 42 | 42 | 42 | 45 | 45 | 50 | 51 | 53 | 56 | 58 | 66 | 75 | 83 | 92 | 100 |
| 21 | 41 | 42 | 44 | 45 | 41 | 42 | 42 | 44 | 47 | 47 | 51 | 53 | 54 | 57 | 59 | 67 | 75 | 84 | 92 | 100 |
| 22 | 39 | 41 | 44 | 41 | 41 | 42 | 44 | 45 | 49 | 49 | 54 | 56 | 57 | 58 | 60 | 68 | 76 | 84 | 92 | 100 |
| 23 | 38 | 41 | 38 | 40 | 41 | 42 | 44 | 46 | 49 | 50 | 56 | 57 | 58 | 60 | 62 | 70 | 77 | 85 | 92 | 100 |
| 24 | 36 | 36 | 38 | 40 | 41 | 42 | 46 | 47 | 50 | 51 | 58 | 59 | 60 | 62 | 63 | 70 | 78 | 85 | 93 | 100 |
| 25 | 32 | 34 | 37 | 40 | 41 | 43 | 46 | 49 | 51 | 53 | 59 | 60 | 62 | 63 | 64 | 71 | 78 | 86 | 93 | 100 |
| 26 | 32 | 34 | 37 | 41 | 43 | 45 | 47 | 50 | 53 | 53 | 60 | 62 | 63 | 64 | 62 | 70 | 77 | 85 | 92 | 100 |
| 27 | 32 | 34 | 38 | 43 | 46 | 47 | 49 | 51 | 53 | 55 | 62 | 63 | 64 | 62 | 62 | 70 | 77 | 85 | 92 | 100 |
| 28 | 30 | 34 | 39 | 43 | 47 | 49 | 51 | 53 | 56 | 58 | 63 | 63 | 61 | 62 | 63 | 70 | 78 | 85 | 93 | 100 |
| 29 | 30 | 35 | 40 | 45 | 50 | 51 | 52 | 55 | 58 | 59 | 64 | 61 | 62 | 63 | 63 | 70 | 78 | 85 | 93 | 100 |
| 30 | 31 | 35 | 40 | 46 | 51 | 52 | 53 | 56 | 59 | 60 | 62 | 62 | 63 | 65 | 65 | 72 | 79 | 86 | 93 | 100 |
| 31 | 31 | 35 | 40 | 46 | 51 | 53 | 55 | 58 | 60 | 58 | 62 | 62 | 63 | 65 | 65 | 72 | 79 | 86 | 93 | 100 |
| 32 | 32 | 35 | 40 | 45 | 51 | 53 | 56 | 59 | 57 | 58 | 62 | 63 | 63 | 65 | 64 | 71 | 78 | 86 | 93 | 100 |
| 33 | 32 | 36 | 41 | 47 | 52 | 55 | 58 | 55 | 58 | 59 | 63 | 63 | 65 | 65 | 65 | 72 | 79 | 86 | 93 | 100 |
| 34 | 33 | 36 | 41 | 47 | 52 | 55 | 55 | 57 | 58 | 59 | 63 | 65 | 64 | 65 | 64 | 71 | 78 | 86 | 93 | 100 |
| 35 | 33 | 36 | 41 | 47 | 52 | 53 | 57 | 58 | 59 | 61 | 63 | 64 | 64 | 64 | 64 | 71 | 78 | 86 | 93 | 100 |
| 36 | 33 | 36 | 41 | 47 | 49 | 53 | 57 | 58 | 59 | 61 | 63 | 64 | 63 | 64 | 63 | 70 | 78 | 85 | 93 | 100 |
| 37 | 32 | 36 | 41 | 44 | 49 | 53 | 57 | 58 | 59 | 60 | 62 | 62 | 61 | 62 | 63 | 70 | 78 | 85 | 93 | 100 |
| 38 | 32 | 37 | 39 | 45 | 50 | 54 | 57 | 58 | 60 | 60 | 61 | 61 | 61 | 62 | 61 | 69 | 77 | 84 | 92 | 100 |
| 39 | 30 | 35 | 39 | 45 | 50 | 54 | 57 | 58 | 60 | 59 | 60 | 60 | 59 | 60 | 61 | 69 | 77 | 84 | 92 | 100 |
| 40 | 28 | 35 | 39 | 45 | 50 | 54 | 56 | 57 | 59 | 59 | 60 | 59 | 59 | 59 | 60 | 68 | 76 | 84 | 92 | 100 |
| Issue Female, Non-SmokerDuration |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Age | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20+ |
| 41 | 28 | 35 | 39 | 45 | 49 | 52 | 55 | 55 | 58 | 57 | 58 | 59 | 58 | 59 | 60 | 68 | 76 | 84 | 92 | 100 |
| 42 | 27 | 35 | 39 | 44 | 49 | 52 | 54 | 55 | 56 | 57 | 57 | 57 | 58 | 60 | 61 | 69 | 77 | 84 | 92 | 100 |
| 43 | 27 | 34 | 39 | 44 | 47 | 50 | 53 | 53 | 55 | 55 | 56 | 57 | 56 | 60 | 61 | 69 | 77 | 84 | 92 | 100 |
| 44 | 26 | 34 | 38 | 42 | 47 | 50 | 52 | 53 | 54 | 55 | 55 | 55 | 56 | 61 | 62 | 70 | 77 | 85 | 92 | 100 |
| 45 | 26 | 33 | 38 | 42 | 45 | 48 | 51 | 51 | 52 | 53 | 54 | 55 | 56 | 61 | 62 | 70 | 77 | 85 | 92 | 100 |
| 46 | 24 | 32 | 37 | 40 | 43 | 47 | 49 | 51 | 52 | 53 | 54 | 55 | 56 | 60 | 61 | 69 | 77 | 84 | 92 | 100 |
| 47 | 24 | 30 | 35 | 39 | 42 | 45 | 47 | 49 | 51 | 53 | 54 | 55 | 56 | 59 | 60 | 68 | 76 | 84 | 92 | 100 |
| 48 | 23 | 30 | 35 | 37 | 40 | 44 | 47 | 49 | 50 | 53 | 54 | 55 | 55 | 59 | 57 | 66 | 74 | 83 | 91 | 100 |
| 49 | 23 | 29 | 33 | 35 | 39 | 42 | 45 | 48 | 50 | 53 | 54 | 55 | 55 | 57 | 56 | 65 | 74 | 82 | 91 | 100 |
| 50 | 21 | 27 | 32 | 34 | 37 | 41 | 44 | 48 | 50 | 53 | 54 | 55 | 55 | 56 | 55 | 64 | 73 | 82 | 91 | 100 |
| 51 | 21 | 26 | 30 | 34 | 37 | 41 | 44 | 48 | 49 | 51 | 53 | 53 | 54 | 55 | 55 | 64 | 73 | 82 | 91 | 100 |
| 52 | 20 | 25 | 30 | 33 | 37 | 41 | 44 | 47 | 48 | 50 | 50 | 51 | 51 | 55 | 53 | 62 | 72 | 81 | 100 | 100 |
| 53 | 19 | 24 | 29 | 32 | 37 | 41 | 43 | 47 | 48 | 48 | 49 | 49 | 51 | 52 | 52 | 62 | 71 | 100 | 100 | 100 |
| 54 | 18 | 24 | 29 | 32 | 37 | 41 | 43 | 45 | 47 | 47 | 47 | 49 | 49 | 51 | 51 | 61 | 100 | 100 | 100 | 100 |
| 55 | 18 | 23 | 28 | 32 | 37 | 41 | 43 | 45 | 45 | 45 | 46 | 46 | 47 | 50 | 50 | 100 | 100 | 100 | 100 | 100 |
| 56 | 18 | 23 | 28 | 32 | 36 | 39 | 42 | 44 | 44 | 45 | 46 | 46 | 46 | 49 | 100 | 100 | 100 | 100 | 100 | 100 |
| 57 | 18 | 23 | 28 | 31 | 35 | 38 | 41 | 42 | 44 | 44 | 45 | 45 | 46 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 58 | 17 | 23 | 26 | 31 | 35 | 36 | 38 | 41 | 41 | 42 | 45 | 45 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 59 | 17 | 23 | 26 | 30 | 33 | 35 | 38 | 39 | 40 | 41 | 44 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 60 | 17 | 23 | 26 | 30 | 32 | 34 | 36 | 38 | 39 | 40 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 61 | 17 | 22 | 25 | 29 | 32 | 33 | 35 | 36 | 38 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 62 | 16 | 22 | 25 | 28 | 30 | 32 | 34 | 35 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 63 | 16 | 20 | 24 | 28 | 30 | 32 | 34 | 80 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 64 | 14 | 21 | 24 | 27 | 29 | 30 | 80 | 80 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 65 | 15 | 19 | 23 | 25 | 28 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 66 | 15 | 19 | 23 | 25 | 72 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 67 | 15 | 19 | 22 | 72 | 72 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 68 | 13 | 18 | 68 | 72 | 72 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 69 | 13 | 64 | 68 | 72 | 72 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 70 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |


| Issue Female, Non-Smoker <br> Duration  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20+ |
| 71 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 72 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 73 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 74 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 75 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 76 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 77 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 78 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 79 | 60 | 60 | 64 | 68 | 68 | 72 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 80 | 60 | 60 | 64 | 68 | 68 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 81 | 60 | 60 | 64 | 68 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 82 | 60 | 60 | 64 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 83 | 60 | 60 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 84 | 60 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| $85+$ | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Issue Female, Smoker <br> Duration |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Age | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | $20+$ |
| 0-15 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 16 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 17 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 18 | 99 | 100 | 100 | 100 | 100 | 100 | 100 | 95 | 96 | 97 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 19 | 87 | 89 | 92 | 92 | 92 | 92 | 84 | 84 | 86 | 86 | 92 | 93 | 95 | 96 | 99 | 99 | 99 | 100 | 100 | 100 |
| 20 | 74 | 77 | 80 | 80 | 80 | 73 | 73 | 73 | 75 | 77 | 83 | 83 | 86 | 88 | 90 | 92 | 94 | 96 | 98 | 100 |
| 21 | 71 | 74 | 78 | 78 | 71 | 71 | 73 | 74 | 77 | 79 | 85 | 86 | 88 | 89 | 90 | 92 | 94 | 96 | 98 | 100 |
| 22 | 68 | 71 | 75 | 70 | 71 | 71 | 73 | 74 | 78 | 79 | 88 | 90 | 89 | 89 | 92 | 94 | 95 | 97 | 98 | 100 |
| 23 | 65 | 69 | 67 | 70 | 70 | 70 | 73 | 77 | 79 | 81 | 89 | 90 | 90 | 92 | 92 | 94 | 95 | 97 | 98 | 100 |
| 24 | 62 | 60 | 64 | 69 | 70 | 70 | 74 | 77 | 79 | 81 | 92 | 90 | 92 | 93 | 93 | 94 | 96 | 97 | 99 | 100 |
| 25 | 53 | 58 | 63 | 67 | 69 | 70 | 74 | 78 | 81 | 82 | 92 | 93 | 93 | 95 | 95 | 96 | 97 | 98 | 99 | 100 |
| 26 | 53 | 58 | 63 | 69 | 71 | 72 | 75 | 79 | 82 | 82 | 93 | 93 | 95 | 96 | 90 | 92 | 94 | 96 | 98 | 100 |
| 27 | 52 | 56 | 63 | 70 | 74 | 74 | 78 | 81 | 82 | 84 | 93 | 95 | 95 | 90 | 90 | 92 | 94 | 96 | 98 | 100 |
| 28 | 52 | 56 | 64 | 71 | 75 | 77 | 79 | 82 | 85 | 86 | 95 | 95 | 90 | 92 | 92 | 94 | 95 | 97 | 98 | 100 |
| 29 | 51 | 56 | 64 | 71 | 78 | 78 | 81 | 84 | 86 | 88 | 95 | 90 | 90 | 92 | 92 | 94 | 95 | 97 | 98 | 100 |
| 30 | 51 | 56 | 64 | 72 | 79 | 79 | 82 | 85 | 88 | 89 | 90 | 90 | 92 | 93 | 93 | 94 | 96 | 97 | 99 | 100 |
| 31 | 51 | 56 | 64 | 72 | 78 | 81 | 84 | 84 | 88 | 84 | 90 | 90 | 92 | 93 | 93 | 94 | 96 | 97 | 99 | 100 |
| 32 | 51 | 56 | 64 | 71 | 78 | 81 | 85 | 86 | 84 | 85 | 90 | 90 | 92 | 94 | 93 | 94 | 96 | 97 | 99 | 100 |
| 33 | 51 | 57 | 62 | 71 | 78 | 82 | 85 | 83 | 84 | 85 | 90 | 92 | 93 | 93 | 93 | 94 | 96 | 97 | 99 | 100 |
| 34 | 51 | 56 | 62 | 71 | 78 | 82 | 81 | 83 | 85 | 86 | 90 | 92 | 92 | 94 | 93 | 94 | 96 | 97 | 99 | 100 |
| 35 | 51 | 56 | 62 | 71 | 78 | 79 | 83 | 84 | 85 | 86 | 90 | 91 | 91 | 93 | 93 | 94 | 96 | 97 | 99 | 100 |
| 36 | 49 | 56 | 62 | 71 | 74 | 79 | 83 | 84 | 85 | 86 | 90 | 90 | 91 | 93 | 92 | 94 | 95 | 97 | 98 | 100 |
| 37 | 48 | 55 | 62 | 67 | 74 | 79 | 83 | 84 | 85 | 86 | 89 | 90 | 89 | 92 | 91 | 93 | 95 | 96 | 98 | 100 |
| 38 | 47 | 55 | 57 | 66 | 72 | 77 | 81 | 84 | 86 | 86 | 87 | 88 | 88 | 90 | 91 | 93 | 95 | 96 | 98 | 100 |
| 39 | 45 | 50 | 57 | 66 | 72 | 77 | 81 | 83 | 85 | 86 | 86 | 87 | 86 | 89 | 90 | 92 | 94 | 96 | 98 | 100 |
| 40 | 41 | 50 | 57 | 66 | 72 | 77 | 81 | 83 | 84 | 85 | 86 | 86 | 86 | 89 | 89 | 91 | 93 | 96 | 98 | 100 |


| Issue Female, Smoker |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20+ |
| 41 | 40 | 50 | 57 | 65 | 71 | 76 | 79 | 81 | 83 | 84 | 85 | 86 | 85 | 89 | 90 | 92 | 94 | 96 | 98 | 100 |
| 42 | 40 | 49 | 57 | 65 | 69 | 74 | 77 | 80 | 82 | 83 | 84 | 85 | 86 | 90 | 92 | 94 | 95 | 97 | 98 | 100 |
| 43 | 39 | 49 | 55 | 63 | 69 | 73 | 76 | 78 | 80 | 82 | 83 | 84 | 85 | 92 | 93 | 94 | 96 | 97 | 99 | 100 |
| 44 | 39 | 48 | 55 | 62 | 67 | 71 | 75 | 78 | 80 | 80 | 82 | 84 | 86 | 93 | 96 | 97 | 98 | 98 | 99 | 100 |
| 45 | 37 | 47 | 55 | 61 | 65 | 70 | 73 | 76 | 78 | 80 | 81 | 84 | 86 | 94 | 97 | 98 | 98 | 99 | 99 | 100 |
| 46 | 36 | 46 | 53 | 59 | 63 | 68 | 71 | 75 | 77 | 79 | 83 | 85 | 86 | 93 | 96 | 97 | 98 | 98 | 99 | 100 |
| 47 | 34 | 44 | 51 | 57 | 62 | 66 | 70 | 75 | 77 | 80 | 83 | 85 | 86 | 93 | 94 | 95 | 96 | 98 | 99 | 100 |
| 48 | 34 | 44 | 50 | 54 | 60 | 64 | 69 | 74 | 77 | 80 | 84 | 86 | 87 | 92 | 92 | 94 | 95 | 97 | 98 | 100 |
| 49 | 33 | 42 | 48 | 53 | 58 | 63 | 68 | 74 | 77 | 81 | 84 | 86 | 87 | 92 | 91 | 93 | 95 | 96 | 98 | 100 |
| 50 | 31 | 41 | 46 | 51 | 57 | 61 | 67 | 74 | 77 | 81 | 85 | 87 | 87 | 91 | 90 | 92 | 94 | 96 | 98 | 100 |
| 51 | 30 | 39 | 45 | 51 | 56 | 61 | 67 | 74 | 75 | 80 | 83 | 85 | 85 | 90 | 90 | 92 | 94 | 96 | 98 | 100 |
| 52 | 29 | 38 | 45 | 50 | 56 | 62 | 68 | 74 | 75 | 79 | 81 | 83 | 84 | 90 | 90 | 92 | 94 | 96 | 100 | 100 |
| 53 | 28 | 37 | 43 | 49 | 57 | 62 | 68 | 73 | 74 | 77 | 79 | 81 | 83 | 89 | 89 | 91 | 93 | 100 | 100 | 100 |
| 54 | 28 | 36 | 43 | 49 | 57 | 63 | 69 | 73 | 74 | 75 | 78 | 80 | 81 | 87 | 89 | 91 | 100 | 100 | 100 | 100 |
| 55 | 26 | 35 | 42 | 49 | 57 | 63 | 69 | 73 | 73 | 74 | 76 | 78 | 79 | 86 | 87 | 100 | 100 | 100 | 100 | 100 |
| 56 | 26 | 35 | 42 | 49 | 56 | 62 | 67 | 71 | 72 | 74 | 76 | 78 | 79 | 85 | 100 | 100 | 100 | 100 | 100 | 100 |
| 57 | 26 | 35 | 42 | 49 | 55 | 61 | 66 | 69 | 72 | 73 | 76 | 78 | 79 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 58 | 28 | 36 | 43 | 49 | 55 | 59 | 63 | 68 | 69 | 72 | 76 | 78 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 59 | 28 | 36 | 43 | 49 | 54 | 57 | 63 | 67 | 68 | 70 | 76 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 60 | 28 | 36 | 43 | 49 | 53 | 57 | 61 | 64 | 67 | 69 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 61 | 26 | 35 | 42 | 48 | 52 | 56 | 59 | 63 | 66 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 62 | 26 | 33 | 41 | 47 | 51 | 55 | 58 | 62 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 63 | 25 | 33 | 41 | 46 | 51 | 55 | 57 | 80 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 64 | 25 | 33 | 40 | 45 | 50 | 53 | 80 | 80 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 65 | 24 | 32 | 39 | 44 | 49 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 66 | 24 | 32 | 39 | 44 | 72 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 67 | 24 | 32 | 39 | 72 | 72 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 68 | 24 | 32 | 68 | 72 | 72 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 69 | 24 | 64 | 68 | 72 | 72 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 70 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

Female, Smoker

| Duration |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20+ |
| 71 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 72 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 73 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 74 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 75 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 80 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 76 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 80 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 77 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 78 | 60 | 60 | 64 | 68 | 68 | 72 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 79 | 60 | 60 | 64 | 68 | 68 | 72 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 80 | 60 | 60 | 64 | 68 | 68 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 81 | 60 | 60 | 64 | 68 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 82 | 60 | 60 | 64 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 83 | 60 | 60 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 84 | 60 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| $85+$ | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

