Intereſt 4 *per cent.*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Ape\*. | Valt :e«. 1 | Ave“. | V⅛lues,. ∣ | A ee | Value1· | lΛg∙e<. | Vaine«. |
| 85-85  8 6-8 6  87- 87  88- 88  89-89  00-90  91- 91  92- 9?  93 93  94-94  9 ς-9 | 1.21 2  i 172’  1.127  I 071  0.949  0.718  0.516  0 326  0.236  0 Σ90  0,024 | ^5∙91  86-92  87’93  88.9a  89-95 | O.725  O.556  o∙459  0.396  0.364 |  |  |  |  |

Table V. *Showing the Values of two Joint Lives, according to the Probabilities of the Duration of Human Life among Males and Females collectively.*

Intereſt 4 *per cent.*

Difference of age 24, 30, 36, and 42 years.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ■ Ai{es. | Vailles. | A∙rre- 1 | Vaines. | Age\*. | Vak∣e\*. | Ages. 1 | V aιu't. |
| 1- 2.5  2- 26  3'27  4- 2b  5- 29  6- 30  7- 31  8- 32  9- 33  10- 34 ,ι-35 12-36 <3 37  14- 38  15- 39 i *6>* 40  17- 41  18- 42 ⅛9-43  20- 4j  21- 45  22- 46  23- 47 24.48  .f25-zi9  26 5c ,⅛7-51 1 .28 52  *29 53 30-5d 3J-55* 32-5i 33^57 34∙5c  35- 55  36- 6c  37- 61  38- 62 39'63 40 6i 4i'65  42- 66  43- ^7 | 12.832 ſe3 409 13.778-.  14003 14o37 i4∙o33 14 006 l3∙94÷ i3∙855' i3∙74i 13∙6°d i3.428i 13∙23T '3θ23 12.798 ‘2-57° 12∙351 i 2.∑4\*, I 1.951  11.751 I 1.550 ll∙335 ιn07 10.862 10.612 10.364 10.130  9.894 9.659  9 413 9.167 8.912  8 6 ç i 8 389 8.114 7∙833 7∙56i  7.296  7∙e33 6763 6.492  6.225 5∙9i^7 5.689 | l'31∣ 2\*52j ■ 3-33  4- 34  5- 35,  6- 3 6j 737· 8-38 9'39:  10- 40  11- 41'  I 2-42, 'r 3-43  14- 44 .15-4S '16-46 ιr7-47 1848  19- 49  20- ^0  21- 5l  22- 52 '23-53 2454 ∙25^55 t6 56 27^57  28- 58  29- 59  30- 60 31 - ſ I  32- 62  33- 63 34^4  15- 65  36- 66  37- ^7  38- 68 3 9’69 4070  41- 71  42- 72  43- 73 -44:74 | 12.196 12.730 13 066 13.264 13.277 13 242 13.r7o 13∙o59 12.913 ‘ 2 743  12 563  12∙379  • 2.196 LI.997 1i.787 IX y62 II 328  1 1 076 10.819 10 567 ,O 332 10 c92  9 852  9.602  9∙347 9.080 8.807 8-534 8 250 *7.967* 7.702 7.446  7 196  6.942 6.679 6.402 6 11 ⅛ ς.828  5∙543 5∙254 *4-977 4-73° 4∙Sσ7 4.32-s* | ι-37  2- 38  3- 39  4.40 y-41  6-42  7∙43  8- 44  9- 45  10- 46  11- 47  12- 48 13∙49 !i4-50 l15-51 !16-52 47-53 ∣18-54 \*9∙55 ∣2O∙5( 41-57 •22-58  23- 59  24- 6c 25∙61  26- 62  27- 63  28- 64  29- 65 30 66 21 67 32-68 33'69 ∣[34-7o 35-71 j36-72  37- 73  38- 74  39- 75 4c-7i ∣41\*77 ⅛42-78  43- 7Ç  44- 8c | II.465:  II.9i3  12.164  12.284 i2242 I2∙l8c  12.112-  X 2.004  *11* 865  Il 694  11 492 ii.259 1r.011  10.759  10-5 Ι-  ΙΟ.264  IO O»K  9 76r  9.500  9 228  • s∙953'  8-67 s  8 385  8.097  7.823  7/557  7 297  7 03?  6.761  6 481  6.197  5∙9'7  5.642  5 364  5∙°93  4 840 ÷603 4.405  4 195  3 *9"S*  *3 7f>2*  5-539  3∙^9i  3.052 | 1'43 2∙44  ■ 3\*45  4-46  5 47  6- 48  7- 49  8- ço·  951  10-52 11"53 12-54 ∙13-55 ,4^5'  15- 57  16- 58 17.59 18 6o 19-61 ^0-62 *'2* J∙.63 2 2-64 33 65 \*24-60  25- 67  26- 68  27- 69  28- 7c  12 9-7'  30-72 '31-73 32-74 '3.3-75  34- 76  35- 77  36- 78  37- 79 ’38-80 39.81  40- 82  41- 83  42- 84  43- 8 5  44- 86 | IO.546  10.<>46  11 168  11.260  U.183  1 06-∣  10.915  10.743 ιo. too  1°-357 1O∙ 140  9.898  9 644  9 371  9 087  8 799  8.503  8 Zθ8  7 928  7.658  7 396  7.127  6 851  6.566  6.275  5.9⅛6  5∙7°2  5∙415  5 i30  4.881  4.646  4 453  4∙25\*  4 040  3 s33  3 i>o5  3∙352  3.098  2 889  2.710  2-553  2.418  2 305  2.203 |

Intereſt 4 *per cent.*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| A e . | ∕aiue-. | Ages. | *V.* ιuc.-. 1 | λ'i>es.' | Values. | Ages J | ∕diuts. |
| 45- 69  46- 70  47- 71  48- 72  49- 73 jo-74  51- 75  52- 76  53- 77  54- 78  55- 79  56- 80  57 81  58-82 .i 9 8 3∙  60- 84  61- 85;  62- 86; ^3-87 64-88  65.89  66- 90  67- 91 .)8-92 09∙93  70-94 7i∙9' | 5.426  5 153  4 884  4 633  4 398  4.205  4 008  3 803  3 <fo>  3∙389  3∙i50  2 909  2.710  2 539  2 385  2.248  2∙J35  2.037  i.916  1.790  1.585  1.290  I.CI7  0.764  0.617  0.514  0.4 I I | 45-75 +6-76 47-77 ſ8 78 49-79 Jo-So ,-ι∙8ι ,2 82  53- 83  54- 84 55∙85 ,6-86 5 7-8 7 58∙88 59-89 6o∙ 90 61-91 62∙92  63- 93  64- 94  65- 95 | 4.i28  3∙921 3715 3∙489 3.238 2.990 2 792 2 623 2-475 2 344 2.232 2.130 2.010  1.864 I 644 ι∙333 I.O,'G O.789 O.639  O533 O.456 | 45- 81  46- 82 +7⅝ 48-84 4985 jo∙86 '51-87  52- 8S  53- 89  54- 9- 55^ι 5 0.-9 2  57- 93  58- 94  59'95 | 2.854  2 684  2∙53f  2 396  2.277  2.171  2.05c  1.901  i.68ι  1.36C  i 078  0 810  : o∙655  0.546  Q∙46⅛ | ⅛87  46- 88  47- 89  48- 9Ό  49- 9l  5O∙92  51- 93  52- 94  53- 95  ίΐ | 2.∙c83  1∙933  1.708  ■•385  1.090  0.818  0.662  0.551  0.468 |

The values of joint lives in theſe tables have been com­puted for only one rate of intereſt ; and of ſingle lives in Table III. for only two rates oſ intereſt. The following rules will ſhow, that it would be a needleſs labour to com­pute theſe values (in ſtrict conformity to the obſervations) for any other rates of intereſt.

Account of a method of deducing, from the correct va­lues (according to any obſervations) of any tingle or joint lives at one rate of intereſt, the ſame values at other rates of intereſt.

Preliminary Problems.

Prob. I. The expectation given oſ a single life by any table of observations, to find its value, ſupposing the decre­ments of life equal, at any given rate of intereſt.

*Solution.* Find the value of an annuity certain for a num­ber of years equal to twice the expectation. Multiply this value by the perpetuity increaſed by unity, and divide the product by twice the expectation : The quotient ſubtracted from the perpetuity will be the value required.

*Example.* The expectation of a male life aged 10, by the Sweden obſervations, is 43.94. Twice this expectation is 87.88, The value oſ an annuity certain for 87.88 years is (reckoning intereſt at 4 *per cent.}* 24.200. The product of 24.200 into 26 (the perpetuity increaſed by unity) is 62.9.2, which, divided by 87.88, gives 7.159. And this quotient ſubtracted from 25 (the perpetuity) gives 17.84 years purchaſe, the value of a life aged ten, deduced from the expectation of life at that age, according to the Sweden obſervations. (See the Tables in Dr Price on. Reversions, vol ii.).

Prob. II. Having the expectations given of any two lives by any table of obſervations, to deduce from thence the value of the joint lives at any rate of intereſt, ſuppoſing an equal decrement of life.

Solution. find the difference between twice the expec-