# Østfold University College 

## Halden

## Re-exam: Global Markets and Institutions, spring 2016

Date: May 20, 2016
Duration: 4 hours

## Lecturer: Maher Asal

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## Instructions

1- You are allowed to have a personal calculator and a dictionary with you. However, notes, books, financial calculator ...etc. are NOT ALLOWED

Choose only $\mathbf{4}$ of the given $\mathbf{5}$ questions. This exam gives max 80 points, 20 points for each question. To pass the exam you need 40 points:

72 points for an A
64 points for B

56 points for C
48 points for D

40 points for E

2- Be brief and to the point.

## Question 1 (20 points)

a) 10 p
i. Calculate Duration on a \$ 1000 Ten-Year 10\% Coupon Bond when the market interest rate (discount rate) is $20 \%$.
ii. Use the discounted cash method to calculate the price of the bond.
iii. Calculate the expected price change if interest rates rise to $11 \%$ using the duration approximation.
b) Consider a 30 -year, fixed-rate mortgage for 3000,000 NOK at a nominal rate of $6 \%$ compounded monthly.
a. Construct an amortization schedule for the first 6 months.
b. If the borrower wants to pay off the remaining balance on the mortgage after 5 years, what is the remaining balance on the mortgage?
c. If the borrower wants to pay off the remaining balance on the mortgage after 15 years, what is the remaining balance on the mortgage?

## Question $2(20$ points)

a) Assume there are only two stocks traded in the stock market, and you are trying to construct an index to show what has happened to stock prices. Let us say that in the base year the prices were $\$ 25$ per share for stock 1 with 100 million shares outstanding and $\$ 12$ for stock 2 with 50 million shares outstanding. A year later, the prices are $\$ 32$ per share for stock 1 and $\$ 8$ per share for stock 2. Using the Dow Jones index and the S\&P 500 index, compute stock indexes showing what has happened to the overall stock market. Which of the two methods do you prefer and why?
b) You have a credit card with a quoted annual percentage rate of $6.2 \%$. Interest is applied to your account monthly (monthly compounding). What is the effective annual rate? 5p
c) You will receive $\$ 17,000$ a year for the next five years from a trust fund your Father is establishing. What is this gift worth today at $8 \%$ discount rate?
d) You want to purchase a new house and you are willing to pay 5000000 kr . If you can invest at $6 \%$ per year and you currently have 1800000 kr , how long will it be before you have enough money to pay cash for this house?

## Question 3 (20 points)

a) A security's price fully reflects all available information in an efficient market. Is this statement true, false, or uncertain? Explain your answer. What are the different forms of market efficiency? How would you test for market efficiency? 5p
b) VOLVO Corporation just paid their annual dividend of SEK 4.5 a share. VOLVO's policy is to increase the dividend by $3 \%$ annually. How much are you willing to pay today for a share of this stock if you require a $12.5 \%$ rate of return? 5 p
c) Consider a coupon bond that has a $\$ 1,000$ face value and a coupon rate of $10 \%$. The bond is currently selling for $\$ 1,217$ and has 9 years to maturity. What is the bond's yield to maturity (YTM)? Explain why would anybody buy this bond; paying today $\$ 1217$ to get $\$ 10009$ years later.
d) A bond has a $12 \%$ coupon rate, matures in 20 years and pays interest semi-annually. The face value is $\$ 1,000$. What is the current price of this bond if the market rate of return (e.g. the discount rate) is $8 \%$ ? Is this bond is selling at par, premium or discount? What is the current yield? Is the yield to maturity (YTM) for this bond is higher or lower than the current yield?5p

## Question 4 (20 points)

Three stocks; A, B and C with the following information:

| State | Probability | Return on stock <br> (A) | Return on stock <br> (B) | Return on stock <br> (C) |
| :--- | :---: | :---: | :---: | :---: |
| Boom | .55 | .12 | .16 | .18 |
| Recession | .45 | .09 | .06 | .04 |

i. Calculate the expected return for each of these three stocks
ii. Calculate the standard deviations for each of these three stocks
iii. If you have to choose only one stock, based on expected return and risk, which stock would you choose?
iv. If the risk-free interest rate is $4 \%$, calculate the risk premium for each stock.
v. Calculate portfolios expected returns and the standard deviation if you invest $40 \%$ of your money on stock (A), $30 \%$ on stock (b) and $30 \%$ on stock (C).

## Question 5 (20 Points)

a) There are at least five primary classes of mutual funds available to investors. Define these five classes. What are the load fund? What distinguishes a hedge fund from other types of mutual funds?
b) A zero coupon bond has a par value of $\$ 1,000$ and matures in 10 years. The bond is selling for $\$ 600$ today. What is the yield to maturity for this bond?
c) You own a $\$ 1,000$-par zero-coupon bond that has 5 years of remaining maturity. You plan on selling the bond in one year and believe that the required yield next year will have the following probability distribution:

| Probability | Required Yield |
| :--- | :--- |
| 0.1 | $6.60 \%$ |
| 0.2 | $6.75 \%$ |
| 0.4 | $7.00 \%$ |
| 0.2 | $7.20 \%$ |
| 0.1 | $7.45 \%$ |

a. What is your expected price when you sell the bond?
b. What is the standard deviation?

APPENDIX
B

## Monthly Compound Interest Tables

## MONTHLY COMPOUND INTEREST TABLES

6.00\% anNual interest rate
0.5000\% MOWTHLY EFFECTIVE INTEREST RATE

|  | 1 <br> AMOUNT OF \$1 AT COMPOUND INTEREST | $\begin{gathered} 2 \\ \text { ACCUMULATION } \\ \text { OF \$1 } \\ \text { PER PERIOD } \end{gathered}$ | $\begin{aligned} & 3 \\ & \text { SINKING } \\ & \text { FUND } \\ & \text { FACTOR } \end{aligned}$ | 4 <br> PRESENT VALUE REVERSIOW OF $\$ 1$ | 5 <br> present value ORD. ANNUITY $\$ 1$ PER PERIOD | $\begin{gathered} 6 \\ \text { INSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE } \$ 1 \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MONTHS |  |  |  |  |  |  | MONTHS |
| 1 | 1.005000 | 1.000000 | 1.000000 | 0.995025 | 0.995025 | 1.005000 | 1 |
| 2 | 1.010025 | 2.005000 | 0.498753 | 0.990075 | 1.985099 | 0.503753 | 2 |
| 3 | 1.015075 | 3.015025 | 0.331672 | 0.985149 | 2.970248 | 0.336672 | 3 |
| 4 | 1.020151 | 4.030100 | 0.248133 | 0.980248 | 3.950496 | 0.253133 | 4 |
| 5 | 1.025251 | 5.050251 | 0.198010 | 0.975371 | 4.925866 | 0.203010 | 5 |
| 6 | 1.030378 | 6.075502 | 0.164595 | 0.970518 | 5.896384 | 0.169595 | 6 |
| 7 | 1.035529 | 7.105879 | 0.140729 | 0.965690 | 6.862074 | 0.145729 | 7 |
| 8 | 1.040707 | 8.141409 | 0.122829 | 0.960885 | 7.822959 | 0.127829 | 8 |
| 9 | 1.045911 | 9.182116 | 0.108907 | 0.956105 | 8.779064 | 0.113907 | 9 |
| 10 | 1.051140 | 10.228026 | 0.097771 | 0.951348 | 9.730412 | 0.102771 | 10 |
| 11 | 1.056396 | 11.279167 | 0.088659 | 0.946615 | 10.677027 | 0.093659 | 11 |
| 12 | 1.061678 | 12.335562 | 0.081066 | 0.941905 | 11.618932 | 0.086066 | 12 |
| YEARS |  |  |  |  |  |  | MONTHS |
| 1 | 1.061678 | 12.335562 | 0.081066 | 0.941905 | 11.618932 | 0.086066 | 12 |
| 2 | 1.127160 | 25.431955 | 0.039321 | 0.887186 | 22.562866 | 0.044321 | 24 |
| 3 | 1.196681 | 39.336105 | 0.025422 | 0.835645 | 32.871016 | 0.030422 | 36 |
| 4 | 1.270489 | 54.097832 | 0.018485 | 0.787098 | 42.580318 | 0.023485 | 48 |
| 5 | 1.348850 | 69.770031 | 0.014333 | 0.741372 | 51.725561 | 0.019333 | 60 |
| 6 | 1.432044 | 86.408856 | 0.011573 | 0.698302 | 60.339514 | 0.016573 | 72 |
| 7 | 1.520370 | 104.073927 | 0.009609 | 0.657735 | 68.453042 | 0.014609 | 84 |
| 8 | 1.614143 | 122.828542 | 0.008141 | 0.619524 | 76.095218 | 0.013141 | 96 |
| 9 | 1.713699 | 142.739900 | 0.007006 | 0.583533 | 83.293424 | 0.012006 | 108 |
| 10 | 1.819397 | 163.879347 | 0.006102 | 0.549633 | 90.073453 | 0.011102 | 120 |
| 11 | 1.931613 | 186.322629 | 0.005367 | 0.517702 | 96.459599 | 0.010367 | 132 |
| 12 | 2.050751 | 210.150163 | 0.004759 | 0.487626 | 102.474743 | 0.009759 | 144 |
| 13 | 2.177237 | 235.447328 | 0.004247 | 0.459298 | 108.140440 | 0.009247 | 156 |
| 14 | 2.311524 | 262.304766 | 0.003812 | 0.432615 | 113.476990 | 0.008812 | 168 |
| 15 | 2.454094 | 290.818712 | 0.003439 | 0.407482 | 118.503515 | 0.008439 | 180 |
| 16 | 2.605457 | 321.091337 | 0.003114 | 0.383810 | 123.238025 | 0.008114 | 192 |
| 17 | 2.766156 | 353.231110 | 0.002831 | 0.361513 | 127.697486 | 0.007831 | 204 |
| 18 | 2.936766 | 387.353194 | 0.002582 | 0.340511 | 131.897876 | 0.007582 | 216 |
| 19 | 3.117899 | 423.579854 | 0.002361 | 0.320729 | 135.854246 | 0.007361 | 228 |
| 20 | 3.310204 | 462.040895 | 0.002164 | 0.302096 | 139.580772 | 0.007164 | 240 |
| 21 | 3.514371 | 502.874129 | 0.001989 | 0.284546 | 143.090806 | 0.006989 | 252 |
| 22 | 3.731129 | 546.225867 | 0.001831 | 0.268015 | 146.396927 | 0.006831 | 264 |
| 23 | 3.961257 | 592.251446 | 0.001688 | 0.252445 | 149.510979 | 0.006688 | 276 |
| 24 | 4.205579 | 641.115782 | 0.001560 | 0.237779 | 152.444121 | 0.006560 | 288 |
| 25 | 4.464970 | 692.993962 | 0.001443 | 0.223966 | 155.206864 | 0.006443 | 300 |
| 26 | 4.740359 | 748.071876 | 0.001337 | 0.210954 | 157.809106 | 0.006337 | 312 |
| 27 | 5.032734 | 806.546875 | 0.001240 | 0.198699 | 160.260172 | 0.006240 | 324 |
| 28 | 5.343142 | 868.628484 | 0.001151 | 0.187156 | 162.568844 | 0.006151 | 336 |
| 29 | 5.672696 | 934.539150 | 0.001070 | 0.176283 | 164.743394 | 0.006070 | 348 |
| 30 | 6.022575 | 1004.515042 | 0.000996 | 0.166042 | 166.791614 | 0.005996 | 360 |
| 31 | 6.394034 | 1078.806895 | 0.000927 | 0.156396 | 168.720844 | 0.005927 | 372 |
| 32 | 6.788405 | 1157.680906 | 0.000864 | 0.147310 | 170.537996 | 0.005864 | 384 |
| 33 | 7.207098 | 1241.419693 | 0.000806 | 0.138752 | 172.249581 | 0.005806 | 396 |
| 34 | 7.651617 | 1330.323306 | 0.000752 | 0.130691 | 173.861732 | 0.005752 | 408 |
| 35 | 8.123551 | 1424.710299 | 0.000702 | 0.123099 | 175.380226 | 0.005702 | 420 |
| 36 | 8.624594 | 1524.918875 | 0.000656 | 0.115947 | 176.810504 | 0.005656 | 432 |
| 37 | 9.156540 | 1631.308097 | 0.000613 | 0.109212 | 178.157690 | 0.005613 | 444 |
| 38 | 9.721296 | 1744.259173 | 0.000573 | 0.102867 | 179.426611 | 0.005573 | 456 |
| 39 | 10.320884 | 1864.176824 | 0.000536 | 0.096891 | 180.621815 | 0.005536 | 468 |
| 40 | 10.957454 | 1991.490734 | 0.000502 | 0.091262 | 181.747584 | 0.005502 | 480 |



## MONTHLY COMPOUND INTEREST TABLES

8.00\% ANNUAL INTEREST RATE
$0.6667 X$ MONTHLY EFFECTIVE INTEREST RATE


MONTHLY COMPOUND INTEREST TABLES
9.00\% ANNUAL INTEREST RATE $\quad 0.7500 \%$ MONTHLY EFFECTIVE INTEREST RATE

|  | 1 <br> AMOUNT OF $\$ 1$ <br> AT COMPOUND INTEREST |  | 3 <br> SINKING <br> FUND <br> FACTOR | 4 PRESENT VALUE REVERSION OF $\$ 1$ | 5 <br> PRESENT VALUE ORD. ANNUITY $\$ 1$ PER PERIOD | $\begin{gathered} 6 \\ \text { INSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE } \$ 1 \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MONTHS |  |  |  |  |  |  | MONTHS |
| 1 | 1.007500 | 1.000000 | 1.000000 | 0.992556 | 0.992556 | 1.007500 | 1 |
| 2 | 1.015056 | 2.007500 | 0.498132 | 0.985167 | 1.977723 | 0.505632 | 2 |
| 3 | 1.022669 | 3.022556 | 0.330846 | 0.977833 | 2.955556 | 0.338346 | 3 |
| 4 | 1.030339 | 4.045225 | 0.247205 | 0.970554 | 3.926110 | 0.254705 | 4 |
| 5 | 1.038067 | 5.075565 | 0.197022 | 0.963329 | 4.889440 | 0.204522 | 5 |
| 6 | 1.045852 | 6.113631 | 0.163569 | 0.956158 | 5.845598 | 0.171069 | 6 |
| 7 | 1.053696 | 7.159484 | 0.139675 | 0.949040 | 6.794638 | 0.147175 | 7 |
| 8 | 1.061599 | 8.213180 | 0.121756 | 0.941975 | 7.736613 | 0.129256 | 8 |
| 9 | 1.069561 | 9.274779 | 0.107819 | 0.934963 | 8.671576 | 0.115319 | 9 |
| 10 | 1.077583 | 10.344339 | 0.096671 | 0.928003 | 9.599580 | 0.104171 | 10 |
| 11 | 1.085664 | 11.421922 | 0.087551 | 0.921095 | 10.520675 | 0.095051 | 11 |
| 12 | 1.093807 | 12.507586 | 0.079951 | 0.914238 | 11.434913 | 0.087451 | 12 |
| YEARS |  |  |  |  |  |  | MONTHS |
| 1 | 1.093807 | 12.507586 | 0.079951 | 0.914238 | 11.434913 | 0.087451 | 12 |
| 2 | 1.196414 | 26.188471 | 0.038185 | 0.835831 | 21.889146 | 0.045685 | 24 |
| 3 | 1.308645 | 41.152716 | 0.024300 | 0.764149 | 31.446805 | 0.031800 | 36 |
| 4 | 1.431405 | 57.520711 | 0.017385 | 0.698614 | 40.184782 | 0.024885 | 48 |
| 5 | 1.565681 | 75.424137 | 0.013258 | 0.638700 | 48.173374 | 0.020758 | 60 |
| 6 | 1.712553 | 95.007028 | 0.010526 | 0.583924 | 55.476849 | 0.018026 | 72 |
| 7 | 1.873202 | 116.426928 | 0.008589 | 0.533845 | 62.153965 | 0.016089 | 84 |
| 8 | 2.048921 | 139.856164 | 0.007150 | 0.488062 | 68.258439 | 0.014650 | 96 |
| 9 | 2.241124 | 165.483223 | 0.006043 | 0.446205 | 73.839382 | 0.013543 | 108 |
| 10 | 2.451357 | 193.514277 | 0.005168 | 0.407937 | 78.941693 | 0.012668 | 120 |
| 11 | 2.681311 | 224.174837 | 0.004461 | 0.372952 | 83.606420 | 0.011961 | 132 |
| 12 | 2.932837 | 257.711570 | 0.003880 | 0.340967 | 87.871092 | 0.011380 | 144 |
| 13 | 3.207957 | 294.394279 | 0.003397 | 0.311725 | 91.770018 | 0.010897 | 156 |
| 14 | 3.508886 | 334.518079 | 0.002989 | 0.284991 | 95.334564 | 0.010489 | 168 |
| 15 | 3.838043 | 378.405769 | 0.002643 | 0.260549 | 98.593409 | 0.010143 | 180 |
| 16 | 4.198078 | 426.410427 | 0.002345 | 0.238204 | 101.572769 | 0.009845 | 192 |
| 17 | 4.591887 | 478.918252 | 0.002088 | 0.217775 | 104.296613 | 0.009588 | 204 |
| 18 | 5.022638 | 536.351674 | 0.001864 | 0.199099 | 106.786856 | 0.009364 | 216 |
| 19 | 5.493796 | 599.172747 | 0.001669 | 0.182024 | 109.063531 | 0.009169 | 228 |
| 20 | 6.009152 | 667.886870 | 0.001497 | 0.166413 | 111.144954 | 0.008997 | 240 |
| 21 | 6.572851 | 743.046852 | 0.001346 | 0.152141 | 113.047870 | 0.008846 | 252 |
| 22 | 7.189430 | 825.257358 | 0.001212 | 0.139093 | 114.787589 | 0.008712 | 264 |
| 23 | 7.863848 | 915.179777 | 0.001093 | 0.127164 | 116.378106 | 0.008593 | 276 |
| 24 | 8.601532 | 1013.537539 | 0.000987 | 0.116258 | 117.832218 | 0.008487 | 288 |
| 25 | 9.408415 | 1121.121937 | 0.000892 | 0.106288 | 119.161622 | 0.008392 | 300 |
| 26 | 10.290989 | 1238.798495 | 0.000807 | 0.097172 | 120.377014 | 0.008307 | 312 |
| 27 | 11.256354 | 1367.513924 | 0.000731 | 0.088839 | 121.488172 | 0.008231 | 324 |
| 28 | 12.312278 | 1508.303750 | 0.000663 | 0.081220 | 122.504035 | 0.008163 | 336 |
| 29 | 13.467255 | 1662.300631 | 0.000602 | 0.074254 | 123.432776 | 0.008102 | 348 |
| 30 | 14.730576 | 1830.743483 | 0.000546 | 0.067886 | 124.281866 | 0.008046 | 360 |
| 31 | 16.112406 | 2014.987436 | 0.000496 | 0.062064 | 125.058136 | 0.007996 | 372 |
| 32 | 17.623861 | 2216.514743 | 0.000451 | 0.056741 | 125.767832 | 0.007951 | 384 |
| 33 | 19.277100 | 2436.946701 | 0.000410 | 0.051875 | 126.416664 | 0.007910 | 396 |
| 34 | 21.085425 | 2678.056697 | 0.000373 | 0.047426 | 127.009850 | 0.007873 | 408 |
| 35 | 23.063384 | 2941.784474 | 0.000340 | 0.043359 | 127.552164 | 0.007840 | 420 |
| 36 | 25.226888 | 3230.251735 | 0.000310 | 0.039640 | 128.047967 | 0.007810 | 432 |
| 37 | 27.593344 | 3545.779215 | 0.000282 | 0.036241 | 128.501250 | 0.007782 | 444 |
| 38 | 30.181790 | 3890.905350 | 0.000257 | 0.033133 | 128.915659 | 0.007777 | 456 |
| 39 | 33.013050 | 4268.406696 | 0.000234 | 0.030291 | 129.294526 | 0.007734 | 468 |
| 40 | 36.109902 | 4681.320273 | 0.000214 | 0.027693 | 129.640902 | 0.007714 | 480 |

## MONTHLY COMPOUND INTEREST TABLES

10.00\% ANNUAL INTEREST RATE
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|  | 1 | 2 | 3 | 4 | 5 | $6$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | AMOUNT OF $\$ 1$ | accumulation | SINKING | Present value | Present value | INSTALLMENT |  |
|  | AT COMPOUND | OF \$1 | FUND | REVERSIOW | ORD. ANNUITY | TO |  |
|  | INTEREST | PER PERICO | FACTOR | OF \$1 | \$1 PER PERIOO | AMORTIZE \$1 |  |
| MONTHS |  |  |  |  |  |  | MONTHS |
| 1 | 1.008333 | 1.000000 | 1.000000 | 0.991736 | 0.991736 | 1.008333 | 1 |
| 2 | 1.016736 | 2.008333 | 0.497925 | 0.983539 | 1.975275 | 0.506259 | 2 |
| 3 | 1.025209 | 3.025069 | 0.330571 | 0.975411 | 2.950686 | 0.338904 | 3 |
| 4 | 1.033752 | 4.050278 | 0.246897 | 0.967350 | 3.918036 | 0.255230 | 4 |
| 5 | 1.042367 | 5.084031 | 0.196694 | 0.959355 | 4.877391 | 0.205028 | 5 |
| 6 | 1.051053 | 6.126398 | 0.163228 | 0.951427 | 5.828817 | 0.171561 | 6 |
| 7 | 1.059812 | 7.177451 | 0.139325 | 0.943563 | 6.772381 | 0.147659 | 7 |
| 8 | 1.068644 | 8.237263 | 0.121400 | 0.935765 | 7.708146 | 0.129733 | 8 |
| 9 | 1.077549 | 9.305907 | 0.107459 | 0.928032 | 8.636178 | 0.115792 | 9 |
| 10 | 1.086529 | 10.383456 | 0.096307 | 0.920362 | 9.556540 | 0.104640 | 10 |
| 11 | 1.095583 | 11.469985 | 0.087184 | 0.912756 | 10.469296 | 0.095517 | 11 |
| 12 | 1.104713 | 12.565568 | 0.079583 | 0.905212 | 11.374508 | 0.087916 | 12 |


| YEARS |  |  |  |  |  |  | MONTHS |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1.104713 | 12.565568 | 0.079583 | 0.905212 | 11.374508 | 0.087916 | 12 |
| 2 | 1.220391 | 26.446915 | 0.037812 | 0.819410 | 21.670855 | 0.046145 | 24 |
| 3 | 1.348182 | 41.781821 | 0.023934 | 0.741740 | 30.991236 | 0.032267 | 36 |
| 4 | 1.489354 | 58.722492 | 0.017029 | 0.671432 | 39.428160 | 0.025363 | 48 |
| 5 | 1.645309 | 77.437072 | 0.012914 | 0.607789 | 47.065369 | 0.021247 | 60 |
| 6 | 1.817594 | 98.111314 | 0.010193 | 0.550178 | 53.978665 | 0.018526 | 72 |
| 7 | 2.007920 | 120.950418 | 0.008268 | 0.498028 | 60.236667 | 0.016601 | 84 |
| 8 | 2.218176 | 146.181076 | 0.006841 | 0.450821 | 65.901488 | 0.015174 | 96 |
| 9 | 2.450448 | 174.053713 | 0.005745 | 0.408089 | 71.029355 | 0.014079 | 108 |
| 10 | 2.707041 | 204.844979 | 0.004882 | 0.369407 | 75.671163 | 0.013215 | 120 |
| 11 | 2.990504 | 238.860493 | 0.004187 | 0.334392 | 79.872986 | 0.012520 | 132 |
| 12 | 3.303649 | 276.437876 | 0.003617 | 0.302696 | 83.676528 | 0.011951 | 144 |
| 13 | 3.649584 | 317.950102 | 0.003145 | 0.274004 | 87.119542 | 0.011478 | 156 |
| 14 | 4.031743 | 363.809201 | 0.002749 | 0.248032 | 90.236201 | 0.011082 | 168 |
| 15 | 4.453920 | 414.470346 | 0.002413 | 0.224521 | 93.057439 | 0.010746 | 180 |
| 16 | 4.920303 | 470.436376 | 0.002126 | 0.203240 | 95.611259 | 0.010459 | 192 |
| 17 | 5.435523 | 532.262780 | 0.001879 | 0.183975 | 97.923008 | 0.010212 | 204 |
| 18 | 6.004693 | 600.563216 | 0.001665 | 0.166536 | 100.015633 | 0.009998 | 216 |
| 19 | 6.633463 | 676.015601 | 0.001479 | 0.150751 | 101.909902 | 0.009813 | 228 |
| 20 | 7.328074 | 759.368836 | 0.001317 | 0.136462 | 103.624619 | 0.009650 | 240 |
| 21 | 8.095419 | 851.450244 | 0.001174 | 0.123527 | 105.176801 | 0.009508 | 252 |
| 22 | 8.943115 | 953.173779 | 0.001049 | 0.111818 | 106.581856 | 0.009382 | 264 |
| 23 | 9.879576 | 1065.549097 | 0.000938 | 0.101219 | 107.853730 | 0.009272 | 276 |
| 24 | 10.914097 | 1189.691580 | 0.000841 | 0.091625 | 109.005045 | 0.009174 | 288 |
| 25 | 12.056945 | 1326.833403 | 0.000754 | 0.082940 | 110.047230 | 0.009087 | 300 |
| 26 | 13.319465 | 1478.335767 | 0.000676 | 0.075078 | 110.990629 | 0.009010 | 312 |
| 27 | 14.714187 | 1645.702407 | 0.000608 | 0.067962 | 111.844605 | 0.008941 | 324 |
| 28 | 16.254954 | 1830.594523 | 0.000546 | 0.061520 | 112.617635 | 0.008880 | 336 |
| 29 | 17.957060 | 2034.847258 | 0.000491 | 0.055688 | 113.317392 | 0.008825 | 348 |
| 30 | 19.837399 | 2260.487925 | 0.000442 | 0.050410 | 113.950820 | 0.008776 | 360 |
| 31 | 21.914634 | 2509.756117 | 0.000398 | 0.045632 | 114.524207 | 0.008732 | 372 |
| 32 | 24.209383 | 2785.125947 | 0.000359 | 0.041306 | 115.043244 | 0.008692 | 384 |
| 33 | 26.744422 | 3089.330596 | 0.000324 | 0.037391 | 115.513083 | 0.008657 | 396 |
| 34 | 29.544912 | 3425.389447 | 0.000292 | 0.033847 | 115.938387 | 0.008625 | 408 |
| 35 | 32.638650 | 3796.638052 | 0.000263 | 0.030639 | 116.323377 | 0.008597 | 420 |
| 36 | 36.056344 | 4206.761236 | 0.000238 | 0.027734 | 116.671876 | 0.008571 | 432 |
| 37 | 39.831914 | 4659.829677 | 0.000215 | 0.025105 | 116.987340 | 0.008548 | 444 |
| 38 | 44.002836 | 5160.340305 | 0.000194 | 0.022726 | 117.272903 | 0.008527 | 456 |
| 39 | 48.610508 | 5713.260935 | 0.000175 | 0.020572 | 117.531398 | 0.008508 | 468 |
| 40 | 53.700663 | 6324.079581 | 0.000158 | 0.018622 | 117.765391 | 0.008491 | 480 |

## MONTHLY COMPOUND INTEREST TABLES

11.00\% ANNUAL INTEREST RATE
$0.9167 x$ mONTHLY EFFECTIVE INTEREST RATE

|  | 1 <br> AMOUNT OF \$1 AT COMPOUND INTEREST | $\begin{aligned} & 2 \\ & \text { ACCUMLATION } \\ & \text { OF \$1 } \\ & \text { PER PERIOD } \end{aligned}$ | $\begin{gathered} 3 \\ \text { SINKING } \\ \text { FUND } \\ \text { FACTOR } \end{gathered}$ | 4 <br> present value REVERSIOW OF $\$ 1$ | 5 <br> PRESENT VALUE ORD. ANNUITY \$1 PER PERIOD | $\begin{gathered} 6 \\ \text { INSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE \$1 } \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MONTHS |  |  |  |  |  |  | MONTHS |
| 1 | 1.009167 | 1.000000 | 1.000000 | 0.990917 | 0.990917 | 1.009167 | 1 |
| 2 | 1.018417 | 2.009167 | 0.497719 | 0.981916 | 1.972832 | 0.506885 | 2 |
| 3 | 1.027753 | 3.027584 | 0.330296 | 0.972997 | 2.945829 | 0.339463 | 3 |
| 4 | 1.037174 | 4.055337 | 0.246589 | 0.964158 | 3.909987 | 0.255755 | 4 |
| 5 | 1.046681 | 5.092511 | 0.196367 | 0.955401 | 4.865388 | 0.205533 | 5 |
| 6 | 1.056276 | 6.139192 | 0.162888 | 0.946722 | 5.812110 | 0.172055 | 6 |
| 7 | 1.065958 | 7.195468 | 0.138976 | 0.938123 | 6.750233 | 0.148143 | 7 |
| 8 | 1.075730 | 8.261427 | 0.121044 | 0.929602 | 7.679835 | 0.130211 | 8 |
| 9 | 1.085591 | 9.337156 | 0.107099 | 0.921158 | 8.600992 | 0.116266 | 9 |
| 10 | 1.095542 | 10.422747 | 0.095944 | 0.912790 | 9.513783 | 0.105111 | 10 |
| 11 | 1.105584 | 11.518289 | 0.086818 | 0.904499 | 10.418282 | 0.095985 | 11 |
| 12 | 1.115719 | 12.623873 | 0.079215 | 0.896283 | 11.314565 | 0.088382 | 12 |
| YEARS |  |  |  |  |  |  | MONTHS |
| 1 | 1.115719 | 12.623873 | 0.079215 | 0.896283 | 11.314565 | 0.088382 | 12 |
| 2 | 1.244829 | 26.708566 | 0.037441 | 0.803323 | 21.455619 | 0.046608 | 24 |
| 3 | 1.388879 | 42.423123 | 0.023572 | 0.720005 | 30.544874 | 0.032739 | 36 |
| 4 | 1.549598 | 59.956151 | 0.016679 | 0.645329 | 38.691421 | 0.025846 | 48 |
| 5 | 1.728916 | 79.518080 | 0.012576 | 0.578397 | 45.993034 | 0.021742 | 60 |
| 6 | 1.928984 | 101.343692 | 0.009867 | 0.518408 | 52.537346 | 0.019034 | 72 |
| 7 | 2.152204 | 125.694940 | 0.007956 | 0.464640 | 58.402903 | 0.017122 | 84 |
| 8 | 2.401254 | 152.864085 | 0.006542 | 0.416449 | 63.660103 | 0.015708 | 96 |
| 9 | 2.679124 | 183.177212 | 0.005459 | 0.373256 | 68.372043 | 0.014626 | 108 |
| 10 | 2.989150 | 216.998139 | 0.004608 | 0.334543 | 72.595275 | 0.013775 | 120 |
| 11 | 3.335051 | 254.732784 | 0.003926 | 0.299846 | 76.380487 | 0.013092 | 132 |
| 12 | 3.720979 | 296.834038 | 0.003369 | 0.268747 | 79.773109 | 0.012536 | 144 |
| 13 | 4.151566 | 343.807200 | 0.002909 | 0.240873 | 82.813859 | 0.012075 | 156 |
| 14 | 4.631980 | 396.216042 | 0.002524 | 0.215890 | 85.539231 | 0.011691 | 168 |
| 15 | 5.167988 | 454.689575 | 0.002199 | 0.193499 | 87.981937 | 0.011366 | 180 |
| 16 | 5.766021 | 519.929596 | 0.001923 | 0.173430 | 90.171293 | 0.011090 | 192 |
| 17 | 6.433259 | 592.719117 | 0.001687 | 0.155442 | 92.133576 | 0.010854 | 204 |
| 18 | 7.177708 | 673.931757 | 0.001484 | 0.139320 | 93.892337 | 0.010650 | 216 |
| 19 | 8.008304 | 764.542228 | 0.001308 | 0.124870 | 95.468685 | 0.010475 | 228 |
| 20 | 8.935015 | 865.638038 | 0.001155 | 0.111919 | 96.881539 | 0.010322 | 240 |
| 21 | 9.968965 | 978.432537 | 0.001022 | 0.100311 | 98.147856 | 0.010189 | 252 |
| 22 | 11.122562 | 1104.279485 | 0.000906 | 0.089907 | 99.282835 | 0.010072 | 264 |
| 23 | 12.409652 | 1244.689295 | 0.000803 | 0.080582 | 100.300098 | 0.009970 | 276 |
| 24 | 13.845682 | 1401.347165 | 0.000714 | 0.072225 | 101.211853 | 0.009880 | 288 |
| 25 | 15.447889 | 1576.133301 | 0.000634 | 0.064734 | 102.029044 | 0.009801 | 300 |
| 26 | 17.235500 | 1771.145485 | 0.000565 | 0.058020 | 102.761478 | 0.009731 | 312 |
| 27 | 19.229972 | 1988.724252 | 0.000503 | 0.052002 | 103.417947 | 0.009670 | 324 |
| 28 | 21.455242 | 2231.480981 | 0.000448 | 0.046609 | 104.006328 | 0.009615 | 336 |
| 29 | 23.938018 | 2502.329236 | 0.000400 | 0.041775 | 104.533685 | 0.009566 | 348 |
| 30 | 26.708098 | 2804.519736 | 0.000357 | 0.037442 | 105.006346 | 0.009523 | 360 |
| 31 | 29.798728 | 3141.679369 | 0.000318 | 0.033558 | 105.429984 | 0.009485 | 372 |
| 32 | 33.247002 | 3517.854723 | 0.000284 | 0.030078 | 105.809684 | 0.009451 | 384 |
| 33 | 37.094306 | 3937.560650 | 0.000254 | 0.026958 | 106.150002 | 0.009421 | 396 |
| 34 | 41.386816 | 4405.834459 | 0.000227 | 0.024162 | 106.455024 | 0.009394 | 408 |
| 35 | 46.176050 | 4928.296368 | 0.000203 | 0.021656 | 106.728409 | 0.009370 | 420 |
| 36 | 51.519489 | 5511.216962 | 0.000181 | 0.019410 | 106.973440 | 0.009348 | 432 |
| 37 | 57.481264 | 6161.592447 | 0.000162 | 0.017397 | 107.193057 | 0.009329 | 444 |
| 38 | 64.132929 | 6887.228628 | 0.000145 | 0.015593 | 107.389897 | 0.009312 | 456 |
| 39 | 71.554317 | 7696.834582 | 0.000130 | 0.013975 | 107.566320 | 0.009297 | 468 |
| 40 | 79.834499 | 8600.127195 | 0.000116 | 0.012526 | 107.724446 | 0.009283 | 480 |

MONTHLY COMPOUND INTEREST TABLES
12.00\% ANNUAL INTEREST RATE $1.0000 \%$ MONTHLY EFFECTIVE INTEREST RATE

|  | 1 <br> AMOUNT OF $\$ 1$ AT COMPOUND INTEREST | $\begin{gathered} 2 \\ \text { ACCUMLATION } \\ \text { OF } \$ 1 \\ \text { PER PERIOO } \end{gathered}$ | $\begin{gathered} 3 \\ \text { SINKING } \\ \text { FUND } \\ \text { FACTOR } \end{gathered}$ | 4 present value REVERSIOW OF $\$ 1$ | 5 <br> PRESENT VALUE ORD. ANNUITY $\$ 1$ PER PERICO | $\begin{gathered} 6 \\ \text { INSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE } \$ 1 \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MONTHS |  |  |  |  |  |  | MONTHS |
| 1 | 1.010000 | 1.000000 | 1.000000 | 0.990099 | 0.990099 | 1.010000 | 1 |
| 2 | 1.020100 | 2.010000 | 0.497512 | 0.980296 | 1.970395 | 0.507512 | 2 |
| 3 | 1.030301 | 3.030100 | 0.330022 | 0.970590 | 2.940985 | 0.340022 | 3 |
| 4 | 1.040604 | 4.060401 | 0.246281 | 0.960980 | 3.901966 | 0.256281 | 4 |
| 5 | 1.051010 | 5.101005 | 0.196040 | 0.951466 | 4.853431 | 0.206040 | 5 |
| 6 | 1.061520 | 6.152015 | 0.162548 | 0.942045 | 5.795476 | 0.172548 | 6 |
| 7 | 1.072135 | 7.213535 | 0.138628 | 0.932718 | 6.728195 | 0.148628 | 7 |
| 8 | 1.082857 | 8.285671 | 0.120690 | 0.923483 | 7.651678 | 0.130690 | 8 |
| 9 | 1.093685 | 9.368527 | 0.106740 | 0.914340 | 8.566018 | 0.116740 | 9 |
| 10 | 1.104622 | 10.462213 | 0.095582 | 0.905287 | 9.471305 | 0.105582 | 10 |
| 11 | 1.115668 | 11.566835 | 0.086454 | 0.896324 | 10.367628 | 0.096454 | 11 |
| 12 | 1.126825 | 12.682503 | 0.078849 | 0.887449 | 11.255077 | 0.088849 | 12 |
| Years |  |  |  |  |  |  | MONTHS |
| 1 | 1.126825 | 12.682503 | 0.078849 | 0.887449 | 11.255077 | 0.088849 | 12 |
| 2 | 1.269735 | 26.973465 | 0.037073 | 0.787566 | 21.243387 | 0.047073 | 24 |
| 3 | 1.430769 | 43.076878 | 0.023214 | 0.698925 | 30.107505 | 0.033214 | 36 |
| 4 | 1.612226 | 61.222608 | 0.016334 | 0.620260 | 37.973959 | 0.026334 | 48 |
| 5 | 1.816697 | 81.669670 | 0.012244 | 0.550450 | 44.955038 | 0.022244 | 60 |
| 6 | 2.047099 | 104.709931 | 0.009550 | 0.488496 | 51.150391 | 0.019550 | 72 |
| 7 | 2.306723 | 130.672274 | 0.007653 | 0.433515 | 56.648453 | 0.017653 | 84 |
| 8 | 2.599273 | 159.927293 | 0.006253 | 0.384723 | 61.527703 | 0.016253 | 96 |
| 9 | 2.928926 | 192.892579 | 0.005184 | 0.341422 | 65.857790 | 0.015184 | 108 |
| 10 | 3.300387 | 230.038689 | 0.004347 | 0.302995 | 69.700522 | 0.014347 | 120 |
| 11 | 3.718959 | 271.895856 | 0.003678 | 0.268892 | 73.110752 | 0.013678 | 132 |
| 12 | 4.190616 | 319.061559 | 0.003134 | 0.238628 | 76.137157 | 0.013134 | 144 |
| 13 | 4.722091 | 372.209054 | 0.002687 | 0.211771 | 78.822939 | 0.012687 | 156 |
| 14 | 5.320970 | 432.096982 | 0.002314 | 0.187936 | 81.206434 | 0.012314 | 168 |
| 15 | 5.995802 | 499.580198 | 0.002002 | 0.166783 | 83.321664 | 0.012002 | 180 |
| 16 | 6.756220 | 575.621974 | 0.001737 | 0.148012 | 85.198824 | 0.011737 | 192 |
| 17 | 7.613078 | 661.307751 | 0.001512 | 0.131353 | 86.864707 | 0.011512 | 204 |
| 18 | 8.578606 | 757.860630 | 0.001320 | 0.116569 | 88.343095 | 0.011320 | 216 |
| 19 | 9.666588 | 866.658830 | 0.001154 | 0.103449 | 89.655089 | 0.011154 | 228 |
| 20 | 10.892554 | 989.255365 | 0.001011 | 0.091806 | 90.819416 | 0.011011 | 240 |
| 21 | 12.274002 | 1127.400210 | 0.000887 | 0.081473 | 91.852698 | 0.010887 | 252 |
| 22 | 13.830653 | 1283.065279 | 0.000779 | 0.072303 | 92.769683 | 0.010779 | 264 |
| 23 | 15.584726 | 1458.472574 | 0.000686 | 0.064165 | 93.583461 | 0.010686 | 276 |
| 24 | 17.561259 | 1656.125905 | 0.000604 | 0.056944 | 94.305647 | 0.010604 | 288 |
| 25 | 19.788466 | 1878.846626 | 0.000532 | 0.050534 | 94.946551 | 0.010532 | 300 |
| 26 | 22.298139 | 2129.813909 | 0.000470 | 0.044847 | 95.515321 | 0.010470 | 312 |
| 27 | 25.126101 | 2412.610125 | 0.000414 | 0.039799 | 96.020075 | 0.010414 | 324 |
| 28 | 28.312720 | 2731.271980 | 0.000366 | 0.035320 | 96.468019 | 0.010366 | 336 |
| 29 | 31.903481 | 3090.348134 | 0.000324 | 0.031345 | 96.865546 | 0.010324 | 348 |
| 30 | 35.949641 | 3494.964133 | 0.000286 | 0.027817 | 97.218331 | 0.010286 | 360 |
| 31 | 40.508956 | 3950.895567 | 0.000253 | 0.024686 | 97.531410 | 0.010253 | 372 |
| 32 | 45.646505 | 4464.650520 | 0.000224 | 0.021907 | 97.809252 | 0.010224 | 384 |
| 33 | 51.435625 | 5043.562459 | 0.000198 | 0.019442 | 98.055822 | 0.010198 | 396 |
| 34 | 57.958949 | 5695.894923 | 0.000176 | 0.017254 | 98.274641 | 0.010176 | 408 |
| 35 | 65.309595 | 6430.959471 | 0.000155 | 0.015312 | 98.468831 | 0.010155 | 420 |
| 36 | 73.592486 | 7259.248603 | 0.000138 | 0.013588 | 98.641166 | 0.010138 | 432 |
| 37 | 82.925855 | 8192.585529 | 0.000122 | 0.012059 | 98.794103 | 0.010122 | 444 |
| 38 | 93.442929 | 9244.292939 | 0.000108 | 0.010702 | 98.929828 | 0.010108 | 456 |
| 39 | 105.293832 | 10429.383172 | 0.000096 | 0.009497 | 99.050277 | 0.010096 | 468 |
| 40 | 118.647725 | 11764.772510 | 0.000085 | 0.008428 | 99.157169 | 0.010085 | 480 |

## MONTHLY COMPOUND INTEREST TABLES

13.00\% ANNUAL INTEREST RATE $1.0833 \%$ MONTHLY EFFECTIVE INTEREST RATE

|  | 1 <br> AMOUNT OF $\$ 1$ AT COMPOUND INTEREST | ```accumulation OF $1 PER PERIOD``` | 3 <br> SINKING <br> FUND FACTOR | 4 PRESENT VALUE REVERSIOW OF \$1 | 5 <br> PRESENT VALUE ORD. ANNUITY <br> \$1 PER PERICO | $\begin{gathered} 6 \\ \text { INSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE } \$ 1 \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MONTHS |  |  |  |  |  |  | MONTHS |
| 1 | 1.010833 | 1.000000 | 1.000000 | 0.989283 | 0.989283 | 1.010833 | 1 |
| 2 | 1.021784 | 2.010833 | 0.497306 | 0.978680 | 1.967963 | 0.508140 | 2 |
| 3 | 1.032853 | 3.032617 | 0.329748 | 0.968192 | 2.936155 | 0.340581 | 3 |
| 4 | 1.044043 | 4.065471 | 0.245974 | 0.957815 | 3.893970 | 0.256807 | 4 |
| 5 | 1.055353 | 5.109513 | 0.195713 | 0.947550 | 4.841520 | 0.206547 | 5 |
| 6 | 1.066786 | 6.164866 | 0.162210 | 0.937395 | 5.778915 | 0.173043 | 6 |
| 7 | 1.078343 | 7.231652 | 0.138281 | 0.927349 | 6.706264 | 0.149114 | 7 |
| 8 | 1.090025 | 8.309995 | 0.120337 | 0.917410 | 7.623674 | 0.131170 | 8 |
| 9 | 1.101834 | 9.400020 | 0.106383 | 0.907578 | 8.531253 | 0.117216 | 9 |
| 10 | 1.113770 | 10.501854 | 0.095221 | 0.897851 | 9.429104 | 0.106055 | 10 |
| 11 | 1.125836 | 11.615624 | 0.086091 | 0.888229 | 10.317333 | 0.096924 | 11 |
| 12 | 1.138032 | 12.741460 | 0.078484 | 0.878710 | 11.196042 | 0.089317 | 12 |
| YEARS |  |  |  |  |  |  | MONTHS |
| 1 | 1.138032 | 12.741460 | 0.078484 | 0.878710 | 11.196042 | 0.089317 | 12 |
| 2 | 1.295118 | 27.241655 | 0.036708 | 0.772130 | 21.034112 | 0.047542 | 24 |
| 3 | 1.473886 | 43.743348 | 0.022861 | 0.678478 | 29.678917 | 0.033694 | 36 |
| 4 | 1.677330 | 62.522811 | 0.015994 | 0.596185 | 37.275190 | 0.02682 ? | 48 |
| 5 | 1.908857 | 83.894449 | 0.011920 | 0.523874 | 43.950107 | 0.022753 | 60 |
| 6 | 2.172341 | 108.216068 | 0.009241 | 0.460333 | 49.815421 | 0.020074 | 72 |
| 7 | 2.472194 | 135.894861 | 0.007359 | 0.404499 | 54.969328 | 0.018192 | 84 |
| 8 | 2.813437 | 167.394225 | 0.005974 | 0.355437 | 59.498115 | 0.016807 | 96 |
| 9 | 3.201783 | 203.241525 | 0.004920 | 0.312326 | 63.477604 | 0.015754 | 108 |
| 10 | 3.643733 | 244.036917 | 0.004098 | 0.274444 | 66.974419 | 0.014931 | 120 |
| 11 | 4.146687 | 290.463399 | 0.003443 | 0.241156 | 70.047103 | 0.014276 | 132 |
| 12 | 4.719064 | 343.298242 | 0.002913 | 0.211906 | 72.747100 | 0.013746 | 144 |
| 13 | 5.370448 | 403.426010 | 0.002479 | 0.186204 | 75.119613 | 0.013312 | 156 |
| 14 | 6.111745 | 471.853363 | 0.002119 | 0.163619 | 77.204363 | 0.012953 | 168 |
| 15 | 6.955364 | 549.725914 | 0.001819 | 0.143774 | 79.036253 | 0.012652 | 180 |
| 16 | 7.915430 | 638.347406 | 0.001567 | 0.126336 | 80.645952 | 0.012400 | 192 |
| 17 | 9.008017 | 739.201542 | 0.001353 | 0.111012 | 82.060410 | 0.012186 | 204 |
| 18 | 10.251416 | 853.976825 | 0.001171 | 0.097548 | 83.303307 | 0.012004 | 216 |
| 19 | 11.666444 | 984.594826 | 0.001016 | 0.085716 | 84.395453 | 0.011849 | 228 |
| 20 | 13.276792 | 1133.242353 | 0.000882 | 0.075319 | 85.355132 | 0.011716 | 240 |
| 21 | 15.109421 | 1302.408067 | 0.000768 | 0.066184 | 86.198412 | 0.011601 | 252 |
| 22 | 17.195012 | 1494.924144 | 0.000669 | 0.058156 | 86.939409 | 0.011502 | 264 |
| 23 | 19.568482 | 1714.013694 | 0.000583 | 0.051103 | 87.590531 | 0.011417 | 276 |
| 24 | 22.269568 | 1963.344717 | 0.000509 | 0.044904 | 88.162677 | 0.011343 | 288 |
| 25 | 25.343491 | 2247.091520 | 0.000445 | 0.039458 | 88.665428 | 0.011278 | 300 |
| 26 | 28.841716 | 2570.004599 | 0.000389 | 0.034672 | 89.107200 | 0.011222 | 312 |
| 27 | 32.822810 | 2937.490172 | 0.000340 | 0.030467 | 89.495389 | 0.011174 | 324 |
| 28 | 37.353424 | 3355.700690 | 0.000298 | 0.026771 | 89.836495 | 0.011131 | 336 |
| 29 | 42.509410 | 3831.637843 | 0.000261 | 0.023524 | 90.136227 | 0.011094 | 348 |
| 30 | 48.377089 | 4373.269783 | 0.000229 | 0.020671 | 90.399605 | 0.011062 | 360 |
| 31 | 55.054699 | 4989.664524 | 0.000200 | 0.018164 | 90.631038 | 0.011034 | 372 |
| 32 | 62.654036 | 5691.141761 | 0.000176 | 0.015961 | 90.834400 | 0.011009 | 384 |
| 33 | 71.302328 | 6489.445641 | 0.000154 | 0.014025 | 91.013097 | 0.010987 | 396 |
| 34 | 81.144365 | 7397.941387 | 0.000135 | 0.012324 | 91.170119 | 0.010969 | 408 |
| 35 | 92.344923 | 8431.839055 | 0.000119 | 0.010829 | 91.308095 | 0.010952 | 420 |
| 36 | 105.091522 | 9608.448184 | 0.000104 | 0.009516 | 91.429337 | 0.010937 | 432 |
| 37 | 119.597566 | 10947.467591 | 0.000091 | 0.008361 | 91.535873 | 0.010925 | 444 |
| 38 | 136.105914 | 12471.315170 | 0.000080 | 0.007347 | 91.629487 | 0.010914 | 456 |
| 39 | 154.892951 | 14205.503212 | 0.000070 | 0.006456 | 91.711747 | 0.010904 | 468 |
| 40 | 176.273210 | 16179.065533 | 0.000062 | 0.005673 | 91.784030 | 0.010895 | 480 |

## MONTHLY COMPOUND INTEREST TABLES

14.00\% ANNUAL INTEREST RATE

|  | 1 <br> AMOUNT OF $\$ 1$ AT COMPOUND INTEREST |  | $\begin{gathered} 3 \\ \text { SINKING } \\ \text { FUND } \\ \text { FACTOR } \end{gathered}$ | 4 <br> present value REVERSION OF $\$ 1$ | 5 <br> present value ORD. ANNUITY \$1 PER PERIOD | $\begin{gathered} 6 \\ \text { INSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE } \$ 1 \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MONTHS |  |  |  |  |  |  | MONTHS |
| 1 | 1.011667 | 1.000000 | 1.000000 | 0.988468 | 0.988468 | 1.011667 | 1 |
| 2 | 1.023469 | 2.011667 | 0.497100 | 0.977069 | 1.965537 | 0.508767 | 2 |
| 3 | 1.035410 | 3.035136 | 0.329475 | 0.965801 | 2.931338 | 0.341141 | 3 |
| 4 | 1.047490 | 4.070546 | 0.245667 | 0.954663 | 3.886001 | 0.257334 | 4 |
| 5 | 1.059710 | 5.118036 | 0.195387 | 0.943654 | 4.829655 | 0.207054 | 5 |
| 6 | 1.072074 | 6.177746 | 0.161871 | 0.932772 | 5.762427 | 0.173538 | 6 |
| 7 | 1.084581 | 7.249820 | 0.137934 | 0.922015 | 6.684442 | 0.149601 | 7 |
| 8 | 1.097235 | 8.334401 | 0.119985 | 0.911382 | 7.595824 | 0.131651 | 8 |
| 9 | 1.110036 | 9.431636 | 0.106026 | 0.900872 | 8.496696 | 0.117693 | 9 |
| 10 | 1.122986 | 10.541672 | 0.094862 | 0.890483 | 9.387178 | 0.106528 | 10 |
| 11 | 1.136088 | 11.664658 | 0.085729 | 0.880214 | 10.267392 | 0.097396 | 11 |
| 12 | 1.149342 | 12.800745 | 0.078120 | 0.870063 | 11.137455 | 0.089787 | 12 |
| Years |  |  |  |  |  |  | MONTHS |
| 1 | 1.149342 | 12.800745 | 0.078120 | 0.870063 | 11.137455 | 0.089787 | 12 |
| 2 | 1.320987 | 27.513180 | 0.036346 | 0.757010 | 20.827743 | 0.048013 | 24 |
| 3 | 1.518266 | 44.422800 | 0.022511 | 0.658646 | 29.258904 | 0.034178 | 36 |
| 4 | 1.745007 | 63.857736 | 0.015660 | 0.573064 | 36.594546 | 0.027326 | 48 |
| 5 | 2.005610 | 86.195125 | 0.011602 | 0.498601 | 42.977016 | 0.023268 | 60 |
| 6 | 2.305132 | 111.868425 | 0.008939 | 0.433815 | 48.530168 | 0.020606 | 72 |
| 7 | 2.649385 | 141.375828 | 0.007073 | 0.377446 | 53.361760 | 0.018740 | 84 |
| 8 | 3.045049 | 175.289927 | 0.005705 | 0.328402 | 57.565549 | 0.017372 | 96 |
| 9 | 3.499803 | 214.268826 | 0.004667 | 0.285730 | 61.223111 | 0.016334 | 108 |
| 10 | 4.022471 | 259.068912 | 0.003860 | 0.248603 | 64.405420 | 0.015527 | 120 |
| 11 | 4.623195 | 310.559534 | 0.003220 | 0.216301 | 67.174230 | 0.014887 | 132 |
| 12 | 5.313632 | 369.739871 | 0.002705 | 0.188195 | 69.583269 | 0.014371 | 144 |
| 13 | 6.107180 | 437.758319 | 0.002284 | 0.163742 | 71.679284 | 0.013951 | 156 |
| 14 | 7.019239 | 515.934780 | 0.001938 | 0.142466 | 73.502950 | 0.013605 | 168 |
| 15 | 8.067507 | 605.786272 | 0.001651 | 0.123954 | 75.089654 | 0.013317 | 180 |
| 16 | 9.272324 | 709.056369 | 0.001410 | 0.107848 | 76.470187 | 0.013077 | 192 |
| 17 | 10.657072 | 827.749031 | 0.001208 | 0.093834 | 77.671337 | 0.012875 | 204 |
| 18 | 12.248621 | 964.167496 | 0.001037 | 0.081642 | 78.716413 | 0.012704 | 216 |
| 19 | 14.077855 | 1120.958972 | 0.000892 | 0.071034 | 79.625696 | 0.012559 | 228 |
| 20 | 16.180270 | 1301.166005 | 0.000769 | 0.061804 | 80.416829 | 0.012435 | 240 |
| 21 | 18.596664 | 1508.285522 | 0.000663 | 0.053773 | 81.105164 | 0.012330 | 252 |
| 22 | 21.373928 | 1746.336688 | 0.000573 | 0.046786 | 81.704060 | 0.012239 | 264 |
| 23 | 24.565954 | 2019.938898 | 0.000495 | 0.040707 | 82.225136 | 0.012162 | 276 |
| 24 | 28.234683 | 2334.401417 | 0.000428 | 0.035417 | 82.678506 | 0.012095 | 288 |
| 25 | 32.451308 | 2695.826407 | 0.000371 | 0.030815 | 83.072966 | 0.012038 | 300 |
| 26 | 37.297652 | 3111.227338 | 0.000321 | 0.026811 | 83.416171 | 0.011988 | 312 |
| 27 | 42.867759 | 3588.665088 | 0.000279 | 0.023328 | 83.714781 | 0.011945 | 324 |
| 28 | 49.269718 | 4137.404359 | 0.000242 | 0.020296 | 83.974591 | 0.011908 | 336 |
| 29 | 56.627757 | 4768.093467 | 0.000210 | 0.017659 | 84.200641 | 0.011876 | 348 |
| 30 | 65.084661 | 5492.970967 | 0.000182 | 0.015365 | 84.397320 | 0.011849 | 360 |
| 31 | 74.804537 | 6326.103143 | 0.000158 | 0.013368 | 84.568442 | 0.011825 | 372 |
| 32 | 85.975998 | 7283.656968 | 0.000137 | 0.011631 | 84.717330 | 0.011804 | 384 |
| 33 | 98.815828 | 8384.213825 | 0.000119 | 0.010120 | 84.846871 | 0.011786 | 396 |
| 34 | 113.573184 | 9649.130077 | 0.000104 | 0.008805 | 84.959580 | 0.011770 | 408 |
| 35 | 130.534434 | 11102.951488 | 0.000090 | 0.007661 | 85.057645 | 0.011757 | 420 |
| 36 | 150.028711 | 12773.889538 | 0.000078 | 0.006665 | 85.142966 | 0.011745 | 432 |
| 37 | 172.434303 | 14694.368868 | 0.000068 | 0.005799 | 85.217202 | 0.011735 | 444 |
| 38 | 198.185992 | 16901.656478 | 0.000059 | 0.005046 | 85.281792 | 0.011726 | 456 |
| 39 | 227.783490 | 19438.584899 | 0.000051 | 0.004390 | 85.337989 | 0.011718 | 468 |
| 40 | 261.801139 | 22354.383358 | 0.000045 | 0.003820 | 85.386883 | 0.011711 | 480 |

## MONTMLY CONPOUD INTEREST TABLES

15.00\% ANRLAL IMTEREST RATE

|  | ```AMOWNT OF $1 AT COMPOMND IMTEREST``` | 2 ACOMALATION Of $\$ 1$ PER PERIOD | 3 SIMKIMG FUND FACTOR | ```4 PRESEMT VALUE REVERSIOW OF $1``` | 5 <br> PRESENT VALUE ORD. ANNUITY $\$ 1$ PER PERIOD | $\begin{gathered} 6 \\ \text { IMSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE \$1 } \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MOWTHS |  |  |  |  |  |  | MOWTHS |
| 1 | 1.012500 | 1.000000 | 1.000000 | 0.987654 | 0.987654 | 1.012500 | 1 |
| 2 | 1.025156 | 2.012500 | 0.496894 | 0.975461 | 1.963115 | 0.509394 | 2 |
| 3 | 1.037971 | 3.037656 | 0.329201 | 0.963418 | 2.926534 | 0.341701 | 3 |
| 4 | 1.050945 | 4.075627 | 0.245361 | 0.951524 | 3.878058 | 0.257861 | 4 |
| 5 | 1.064082 | 5.126572 | 0.195062 | 0.93977 | 4.817835 | 0.207562 | 5 |
| 6 | 1.077383 | 6.190654 | 0.161534 | 0.928175 | 5.746010 | 0.174034 | 6 |
| 7 | 1.090850 | 7.268038 | 0.137589 | 0.916716 | 6.662726 | 0.150089 | 7 |
| 8 | 1.104486 | 8.358888 | 0.119633 | 0.905398 | 7.568124 | 0.132133 | 8 |
| 9 | 1.118292 | 9.463374 | 0.105671 | 0.894221 | 8.462345 | 0.118171 | 9 |
| 10 | 1.132271 | 10.581666 | 0.094503 | 0.883181 | 9.345526 | 0.107003 | 10 |
| 11 | 1.146424 | 11.713937 | 0.085368 | 0.872277 | 10.217803 | 0.097868 | 11 |
| 12 | 1.160735 | 12.860361 | 0.077758 | 0.861509 | 11.079312 | 0.090258 | 12 |
| YEARS |  |  |  |  |  |  | MONTHS |
| 1 | 1.160755 | 12.860361 | 0.077758 | 0.861509 | 11.079312 | 0.090258 | 12 |
| 2 | 1.347351 | 27.788084 | 0.035987 | 0.742197 | 20.624235 | 0.048487 | 24 |
| 3 | 1.563944 | 45.115505 | 0.022165 | 0.639409 | 28.847267 | 0.034665 | 36 |
| 4 | 1.815355 | 65.228388 | 0.015331 | 0.550856 | 35.931481 | 0.027831 | 48 |
| 5 | 2.107181 | 88.574508 | 0.011290 | 0.474568 | 42.034592 | 0.023790 | 60 |
| 6 | 2.445920 | 115.673621 | 0.008645 | 0.408844 | 47.292474 | 0.021145 | 72 |
| 7 | 2.839113 | 147.129040 | 0.006797 | 0.352223 | 51.822185 | 0.019297 | 84 |
| 8 | 3.295513 | 183.641059 | 0.005445 | 0.303443 | 55.724570 | 0.017945 | 96 |
| 9 | 3.825282 | 226.022551 | 0.004424 | 0.261419 | 59.086509 | 0.016924 | 108 |
| 10 | 4.440213 | 275.217058 | 0.003633 | 0.225214 | 61.982847 | 0.016133 | 120 |
| 11 | 5.153998 | 332.319805 | 0.003009 | 0.194024 | 64.478068 | 0.015509 | 132 |
| 12 | 5.982526 | 398.602077 | 0.002509 | 0.167153 | 66.627722 | 0.015009 | 144 |
| 13 | 6.944244 | 475.539523 | 0.002103 | 0.144004 | 68.479668 | 0.014603 | 156 |
| 14 | 8.060563 | 564.845011 | 0.001770 | 0.124061 | 70.075134 | 0.014270 | 168 |
| 15 | 9.356334 | 668.506759 | $0.0014 \%$ | 0.106879 | 71.449643 | 0.013996 | 180 |
| 16 | 10.860408 | 788.832603 | 0.001268 | 0.092078 | 72.633794 | 0.013768 | 192 |
| 17 | 12.606267 | 928.501369 | 0.001077 | 0.079326 | 73.653950 | 0.013577 | 204 |
| 18 | 14.632781 | 1090.622520 | 0.000917 | 0.068340 | 74.532823 | 0.013417 | 216 |
| 19 | 16.985067 | 1278.805378 | 0.000782 | 0.058875 | 75.289980 | 0.013282 | 228 |
| 20 | 19.715494 | 1497.239481 | 0.000668 | 0.050722 | 75.942278 | 0.013168 | 240 |
| 21 | 22.884848 | 1750.787854 | 0.000571 | 0.043697 | 76.504237 | 0.013071 | 252 |
| 22 | 26.563691 | 2045.095272 | 0.000489 | 0.037645 | 76.988370 | 0.012989 | 264 |
| 23 | 30.833924 | 2386.713938 | 0.000419 | 0.032432 | 77.405455 | 0.012919 | 276 |
| 24 | 35.790617 | 2783.249347 | 0.000359 | 0.027940 | 77.76477 | 0.012859 | 288 |
| 25 | 41.544120 | 3243.529615 | 0.000308 | 0.024071 | 78.074336 | 0.012808 | 300 |
| 26 | 48.222525 | 3777.802015 | 0.000265 | 0.020737 | 78.341024 | 0.012765 | 312 |
| 27 | 55.974514 | 4397.961118 | 0.000227 | 0.017865 | 78.570778 | 0.012727 | 324 |
| 28 | 64.972670 | 5117.813598 | 0.000195 | 0.015391 | 78.768713 | 0.012695 | 336 |
| 29 | 75.417320 | 5953.385616 | 0.000168 | 0.013260 | 78.939236 | 0.012668 | 348 |
| 30 | 87.540995 | 6923.279611 | 0.000144 | 0.011423 | 79.086142 | 0.012644 | 360 |
| 31 | 101.613606 | 8049.088447 | 0.000124 | 0.009841 | 79.212704 | 0.012624 | 372 |
| 32 | 117.948452 | 9355.876140 | 0.000107 | 0.008478 | 79.321738 | 0.012607 | 384 |
| 33 | 136.909198 | 10872.735858 | 0.000092 | 0.007304 | 79.415671 | 0.012592 | 396 |
| 34 | 158.917970 | 12633.437629 | 0.000079 | 0.006293 | 79.496596 | 0.012579 | 408 |
| 35 | 184.464732 | 14677.180163 | 0.000068 | 0.005421 | 79.566313 | 0.012568 | 420 |
| 36 | 214.118294 | 17049.463544 | 0.000059 | 0.004670 | 79.626375 | 0.012559 | 432 |
| 37 | 248.538777 | 19803.102194 | 0.000050 | 0.004024 | 79.678119 | 0.012550 | 444 |
| 38 | 288.492509 | 22999.400699 | 0.000043 | 0.003466 | 79.722696 | 0.012543 | 456 |
| 39 | 334.868983 | 26709.518627 | 0.000037 | 0.002986 | 79.761101 | 0.012537 | 468 |
| 40 | 388.700685 | 31016.054774 | 0.000032 | 0.002573 | 79.794186 | 0.012532 | 480 |

## MONTHLY COMPOUND INTEREST TABLES

16.00\% ANNUAL INTEREST RATE
1.3333X mowthly effective interest rate

|  | 1 <br> AMOUNT OF \$1 AT COMPOUND INTEREST | ```ACCUMNLATION OF $1 PER PERIOD``` | $\begin{gathered} 3 \\ \text { SINKING } \\ \text { FUND } \\ \text { FACTOR } \end{gathered}$ | ```present value REVERSIOW OF $1``` | 5 <br> present value ORD. ANNUITY \$1 PER PERICO | $\begin{gathered} 6 \\ \text { INSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE } \$ 1 \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MOWTHS |  |  |  |  |  |  | MONTHS |
| 1 | 1.013333 | 1.000000 | 1.000000 | 0.986842 | 0.986842 | 1.013333 | 1 |
| 2 | 1.026844 | 2.013333 | 0.496689 | 0.973857 | 1.960699 | 0.510022 | 2 |
| 3 | 1.040536 | 3.040178 | 0.328928 | 0.961043 | 2.921743 | 0.342261 | 3 |
| 4 | 1.054410 | 4.080713 | 0.245055 | 0.948398 | 3.870141 | 0.258389 | 4 |
| 5 | 1.068468 | 5.135123 | 0.194737 | 0.935919 | 4.806060 | 0.208071 | 5 |
| 6 | 1.082715 | 6.203591 | 0.161197 | 0.923604 | 5.729665 | 0.174530 | 6 |
| 7 | 1.097151 | 7.286306 | 0.137244 | 0.911452 | 6.641116 | 0.150577 | 7 |
| 8 | 1.111779 | 8.383457 | 0.119283 | 0.899459 | 7.540575 | 0.132616 | 8 |
| 9 | 1.126603 | 9.495236 | 0.105316 | 0.887624 | 8.428199 | 0.118649 | 9 |
| 10 | 1.141625 | 10.621839 | 0.094146 | 0.875945 | 9.304144 | 0.107479 | 10 |
| 11 | 1.156846 | 11.763464 | 0.085009 | 0.864419 | 10.168563 | 0.098342 | 11 |
| 12 | 1.172271 | 12.920310 | 0.077398 | 0.853045 | 11.021609 | 0.090731 | 12 |
| YEARS |  |  |  |  |  |  | MONTHS |
| 1 | 1.172271 | 12.920310 | 0.077398 | 0.853045 | 11.021609 | 0.090731 | 12 |
| 2 | 1.374219 | 28.066412 | 0.035630 | 0.727686 | 20.423539 | 0.048963 | 24 |
| 3 | 1.610957 | 45.821745 | 0.021824 | 0.620749 | 28.443811 | 0.035157 | 36 |
| 4 | 1.888477 | 66.635803 | 0.015007 | 0.529527 | 35.285465 | 0.028340 | 48 |
| 5 | 2.213807 | 91.035516 | 0.010985 | 0.451711 | 41.121706 | 0.024318 | 60 |
| 6 | 2.595181 | 119.638587 | 0.008359 | 0.385330 | 46.100283 | 0.021692 | 72 |
| 7 | 3.042255 | 153.169132 | 0.006529 | 0.328704 | 50.347235 | 0.019862 | 84 |
| 8 | 3.566347 | 192.476010 | 0.005195 | 0.280399 | 53.970077 | 0.018529 | 96 |
| 9 | 4.180724 | 238.554316 | 0.004192 | 0.239193 | 57.060524 | 0.017525 | 108 |
| 10 | 4.900941 | 292.570569 | 0.003418 | 0.204042 | 59.696816 | 0.016751 | 120 |
| 11 | 5.745230 | 355.892244 | 0.002810 | 0.174057 | 61.945692 | 0.016143 | 132 |
| 12 | 6.734965 | 430.122395 | 0.002325 | 0.148479 | 63.864085 | 0.015658 | 144 |
| 13 | 7.895203 | 517.140233 | 0.001934 | 0.126659 | 65.500561 | 0.015267 | 156 |
| 14 | 9.255316 | 619.148703 | 0.001615 | 0.108046 | 66.896549 | 0.014948 | 168 |
| 15 | 10.849737 | 738.730255 | 0.001354 | 0.092168 | 68.087390 | 0.014687 | 180 |
| 16 | 12.718830 | 878.912215 | 0.001138 | 0.078624 | 69.103231 | 0.014471 | 192 |
| 17 | 14.909912 | 1043.243434 | 0.000959 | 0.067069 | 69.959789 | 0.014292 | 204 |
| 18 | 17.478455 | 1235.884123 | 0.000809 | 0.057213 | 70.709003 | 0.014142 | 216 |
| 19 | 20.489482 | 1461.711177 | 0.000684 | 0.048806 | 71.339585 | 0.014017 | 228 |
| 20 | 24.019222 | 1726.441638 | 0.000579 | 0.041633 | 71.877501 | 0.013913 | 240 |
| 21 | 28.157032 | 2036.777427 | 0.000491 | 0.035515 | 72.336367 | 0.013824 | 252 |
| 22 | 33.007667 | 2400.575011 | 0.000417 | 0.030296 | 72.727801 | 0.013750 | 264 |
| 23 | 38.693924 | 2827.044294 | 0.000354 | 0.025844 | 73.061711 | 0.013687 | 276 |
| 24 | 45.359757 | 3326.981781 | 0.000301 | 0.022046 | 73.346552 | 0.013634 | 288 |
| 25 | 53.173919 | 3913.043898 | 0.000256 | 0.018806 | 73.589534 | 0.013589 | 300 |
| 26 | 62.334232 | 4600.067404 | 0.000217 | 0.016043 | 73.796809 | 0.013551 | 312 |
| 27 | 73.072600 | 5405.444997 | 0.000185 | 0.013685 | 73.973623 | 0.013518 | 324 |
| 28 | 85.660875 | 6349.565632 | 0.000157 | 0.011674 | 74.124454 | 0.013491 | 336 |
| 29 | 100.417742 | 7456.330682 | 0.000134 | 0.009958 | 74.253120 | 0.013467 | 348 |
| 30 | 117.716787 | 8753.759030 | 0.000114 | 0.008495 | 74.362878 | 0.013448 | 360 |
| 31 | 137.995952 | 10274.696396 | 0.000097 | 0.007247 | 74.456506 | 0.013431 | 372 |
| 32 | 161.768625 | 12057.646856 | 0.000083 | 0.006182 | 74.536375 | 0.013416 | 384 |
| 33 | 189.636635 | 14147.747615 | 0.000071 | 0.005273 | 74.604507 | 0.013404 | 396 |
| 34 | 222.305489 | 16597.911700 | 0.000060 | 0.004498 | 74.662626 | 0.013394 | 408 |
| 35 | 260.602233 | 19470.167508 | 0.000051 | 0.003837 | 74.712205 | 0.013385 | 420 |
| 36 | 305.496388 | 22837.229116 | 0.000044 | 0.003273 | 74.754498 | 0.013377 | 432 |
| 37 | 358.124495 | 26784.337116 | 0.000037 | 0.002792 | 74.790576 | 0.013371 | 444 |
| 38 | 419.818887 | 31411.416562 | 0.000032 | 0.002382 | 74.821352 | 0.013365 | 456 |
| 39 | 492.141422 | 36835.606677 | 0.000027 | 0.002032 | 74.847605 | 0.013360 | 468 |
| 40 | 576.923018 | 43194.226353 | 0.000023 | 0.001733 | 74.870000 | 0.013356 | 480 |

## MONTHLY COMPOUND INTEREST TABLES

17.00\% ANNUAL INTEREST RATE
$1.4167 \%$ mONTHLY EFFECTIVE INTEREST RATE

|  | 1 <br> AMOUNT OF \$1 AT COMPOUND INTEREST | ```ACCUMULATION OF $1 PER PERIOO``` | $\begin{aligned} & 3 \\ & \text { SINKING } \\ & \text { FUND } \\ & \text { FACTOR } \end{aligned}$ | 4 PRESENT VALUE REVERSION OF $\$ 1$ | 5 <br> PRESENT VALUE ORD. ANNUITY $\$ 1$ PER PERICO | $\begin{gathered} 6 \\ \text { INSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE } \$ 1 \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MONTHS |  |  |  |  |  |  | MONTHS |
| 1 | 1.014167 | 1.000000 | 1.000000 | 0.986031 | 0.986031 | 1.014167 | 1 |
| 2 | 1.028534 | 2.014167 | 0.496483 | 0.972258 | 1.958289 | 0.510650 | 2 |
| 3 | 1.043105 | 3.042701 | 0.328655 | 0.958676 | 2.916965 | 0.342822 | 3 |
| 4 | 1.057882 | 4.085806 | 0.244750 | 0.945285 | 3.862250 | 0.258916 | 4 |
| 5 | 1.072869 | 5.143688 | 0.194413 | 0.932080 | 4.794330 | 0.208580 | 5 |
| 6 | 1.088068 | 6.216557 | 0.160861 | 0.919060 | 5.713391 | 0.175027 | 6 |
| 7 | 1.103482 | 7.304625 | 0.136900 | 0.906222 | 6.619613 | 0.151066 | 7 |
| 8 | 1.119115 | 8.408107 | 0.118933 | 0.893563 | 7.513176 | 0.133100 | 8 |
| 9 | 1.134969 | 9.527222 | 0.104962 | 0.881081 | 8.394257 | 0.119129 | 9 |
| 10 | 1.151048 | 10.662191 | 0.093789 | 0.868774 | 9.263031 | 0.107956 | 10 |
| 11 | 1.167354 | 11.813238 | 0.084651 | 0.856638 | 10.119669 | 0.098817 | 11 |
| 12 | 1.183892 | 12.980593 | 0.077038 | 0.844672 | 10.964341 | 0.091205 | 12 |
| Years |  |  |  |  |  |  | MONTHS |
| 1 | 1.183892 | 12.980593 | 0.077038 | 0.844672 | 10.964341 | 0.091205 | 12 |
| 2 | 1.401600 | 28.348209 | 0.035276 | 0.713471 | 20.225611 | 0.049442 | 24 |
| 3 | 1.659342 | 46.541802 | 0.021486 | 0.602648 | 28.048345 | 0.035653 | 36 |
| 4 | 1.964482 | 68.081048 | 0.014688 | 0.509040 | 34.655988 | 0.028855 | 48 |
| 5 | 2.325733 | 93.581182 | 0.010686 | 0.429972 | 40.237278 | 0.024853 | 60 |
| 6 | 2.753417 | 123.770579 | 0.008079 | 0.363185 | 44.951636 | 0.022246 | 72 |
| 7 | 3.259747 | 159.511558 | 0.006269 | 0.306772 | 48.933722 | 0.020436 | 84 |
| 8 | 3.859188 | 201.825006 | 0.004955 | 0.259122 | 52.297278 | 0.019121 | 96 |
| 9 | 4.568860 | 251.919548 | 0.003970 | 0.218873 | 55.138379 | 0.018136 | 108 |
| 10 | 5.409036 | 311.226062 | 0.003213 | 0.184876 | 57.538177 | 0.017380 | 120 |
| 11 | 6.403713 | 381.438553 | 0.002622 | 0.156159 | 59.565218 | 0.016788 | 132 |
| 12 | 7.581303 | 464.562540 | 0.002153 | 0.131903 | 61.277403 | 0.016319 | 144 |
| 13 | 8.975441 | 562.972341 | 0.001776 | 0.111415 | 62.723638 | 0.015943 | 156 |
| 14 | 10.625951 | 679.478890 | 0.001472 | 0.094109 | 63.945231 | 0.015638 | 168 |
| 15 | 12.579975 | 817.410030 | 0.001223 | 0.079491 | 64.977077 | 0.015390 | 180 |
| 16 | 14.893329 | 980.705566 | 0.001020 | 0.067144 | 65.848648 | 0.015186 | 192 |
| 17 | 17.632089 | 1174.029800 | 0.000852 | 0.056715 | 66.584839 | 0.015018 | 204 |
| 18 | 20.874484 | 1402.904761 | 0.000713 | 0.047905 | 67.206679 | 0.014879 | 216 |
| 19 | 24.713129 | 1673.867935 | 0.000597 | 0.040464 | 67.731930 | 0.014764 | 228 |
| 20 | 29.257669 | 1994.658995 | 0.000501 | 0.034179 | 68.175595 | 0.014668 | 240 |
| 21 | 34.637912 | 2374.440878 | 0.000421 | 0.028870 | 68.550346 | 0.014588 | 252 |
| 22 | 41.007538 | 2824.061507 | 0.000354 | 0.024386 | 68.866887 | 0.014521 | 264 |
| 23 | 48.548485 | 3356.363651 | 0.000298 | 0.020598 | 69.134261 | 0.014465 | 276 |
| 24 | 57.476150 | 3986.551756 | 0.000251 | 0.017399 | 69.360104 | 0.014418 | 288 |
| 25 | 68.045538 | 4732.626240 | 0.000211 | 0.014696 | 69.550868 | 0.014378 | 300 |
| 26 | 80.558550 | 5615.897651 | 0.000178 | 0.012413 | 69.712000 | 0.014345 | 312 |
| 27 | 95.372601 | 6661.595368 | 0.000150 | 0.010485 | 69.848104 | 0.014317 | 324 |
| 28 | 112.910833 | 7899.588246 | 0.000127 | 0.008857 | 69.963067 | 0.014293 | 336 |
| 29 | 133.674202 | 9365.237774 | 0.000107 | 0.007481 | 70.060174 | 0.014273 | 348 |
| 30 | 158.255782 | 11100.408126 | 0.000090 | 0.006319 | 70.142196 | 0.014257 | 360 |
| 31 | 187.357711 | 13154.661953 | 0.000076 | 0.005337 | 70.211479 | 0.014243 | 372 |
| 32 | 221.811244 | 15586.676066 | 0.000064 | 0.004508 | 70.270000 | 0.014231 | 384 |
| 33 | 262.600497 | 18465.917458 | 0.000054 | 0.003808 | 70.319431 | 0.014221 | 396 |
| 34 | 310.890557 | 21874.627526 | 0.000046 | 0.003217 | 70.361184 | 0.014212 | 408 |
| 35 | 368.060758 | 25910.171179 | 0.000039 | 0.002717 | 70.396451 | 0.014205 | 420 |
| 36 | 435.744087 | 30687.817929 | 0.000033 | 0.002295 | 70.426241 | 0.014199 | 432 |
| 37 | 515.873821 | 36344.034396 | 0.000028 | 0.001938 | 70.451403 | 0.014194 | 444 |
| 38 | 610.738749 | 43040.382285 | 0.000023 | 0.001637 | 70.472657 | 0.014190 | 456 |
| 39 | 723.048553 | 50968.133160 | 0.000020 | 0.001383 | 70.490609 | 0.014186 | 468 |
| 40 | 856.011201 | 60353.731845 | 0.000017 | 0.001168 | 70.505773 | 0.014183 | 480 |

## MONTHLY COMPOUND INTEREST TABLES

18.00\% ANNUAL INTEREST RATE
1.5000\% MONTHLY EFFECTIVE INTEREST RATE

|  | 1 <br> AMOUNT OF $\$ 1$ AT COMPOUND INTEREST | ```2 acCumulation OF $1 PER PERIOD``` | $\begin{gathered} 3 \\ \text { SINKING } \\ \text { FUND } \\ \text { FACTOR } \end{gathered}$ | 4 <br> PRESENT Value REVERSIOW OF $\$ 1$ | 5 <br> present value ORD. ANNUITY \$1 PER PERIOD | $\begin{gathered} 6 \\ \text { INSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE } \$ . \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MONTHS |  |  |  |  |  |  | MONTHS |
| 1 | 1.015000 | 1.000000 | 1.000000 | 0.985222 | 0.985222 | 1.015000 | 1 |
| 2 | 1.030225 | 2.015000 | 0.496278 | 0.970662 | 1.955883 | 0.511278 | 2 |
| 3 | 1.045678 | 3.045225 | 0.328383 | 0.956317 | 2.912200 | 0.343383 | 3 |
| 4 | 1.061364 | 4.090903 | 0.244445 | 0.942184 | 3.854385 | 0.259445 | 4 |
| 5 | 1.077284 | 5.152267 | 0.194089 | 0.928260 | 4.782645 | 0.209089 | 5 |
| 6 | 1.093443 | 6.229551 | 0.160525 | 0.914542 | 5.697187 | 0.175525 | 6 |
| 7 | 1.109845 | 7.322994 | 0.136556 | 0.901027 | 6.598214 | 0.151556 | 7 |
| 8 | 1.126493 | 8.432839 | 0.118584 | 0.887711 | 7.485925 | 0.133584 | 8 |
| 9 | 1.143390 | 9.559332 | 0.104610 | 0.874592 | 8.360517 | 0.119610 | 9 |
| 10 | 1.160541 | 10.702722 | 0.093434 | 0.861667 | 9.222185 | 0.108434 | 10 |
| 11 | 1.177949 | 11.863262 | 0.084294 | 0.848933 | 10.071118 | 0.099294 | 11 |
| 12 | 1.195618 | 13.041211 | 0.076680 | 0.836387 | 10.907505 | 0.091680 | 12 |
| years |  |  |  |  |  |  | MONTHS |
| 1 | 1.195618 | 13.041211 | 0.076680 | 0.836387 | 10.907505 | 0.091680 | 12 |
| 2 | 1.429503 | 28.633521 | 0.034924 | 0.699544 | 20.030405 | 0.049924 | 24 |
| 3 | 1.709140 | 47.275969 | 0.021152 | 0.585090 | 27.660684 | 0.036152 | 36 |
| 4 | 2.043478 | 69.565219 | 0.014375 | 0.489362 | 34.042554 | 0.029375 | 48 |
| 5 | 2.443220 | 96.214652 | 0.010393 | 0.409296 | 39.380269 | 0.025393 | 60 |
| 6 | 2.921158 | 128.077197 | 0.007808 | 0.342330 | 43.844667 | 0.022808 | 72 |
| 7 | 3.492590 | 166.172636 | 0.006018 | 0.286321 | 47.578633 | 0.021018 | 84 |
| 8 | 4.175804 | 211.720235 | 0.004723 | 0.239475 | 50.701675 | 0.019723 | 96 |
| 9 | 4.992667 | 266.177771 | 0.003757 | 0.200294 | 53.313749 | 0.018757 | 108 |
| 10 | 5.969323 | 331.288191 | 0.003019 | 0.167523 | 55.498454 | 0.018019 | 120 |
| 11 | 7.137031 | 409.135393 | 0.002444 | 0.140114 | 57.325714 | 0.017444 | 132 |
| 12 | 8.533164 | 502.210922 | 0.001991 | 0.117190 | 58.854011 | 0.016991 | 144 |
| 13 | 10.202406 | 613.493716 | 0.001630 | 0.098016 | 60.132260 | 0.016630 | 156 |
| 14 | 12.198182 | 746.545446 | 0.001340 | 0.081979 | 61.201371 | 0.016340 | 168 |
| 15 | 14.584368 | 905.624513 | 0.001104 | 0.068567 | 62.095562 | 0.016104 | 180 |
| 16 | 17.437335 | 1095.822335 | 0.000913 | 0.057348 | 62.843452 | 0.015913 | 192 |
| 17 | 20.848395 | 1323.226308 | 0.000756 | 0.047965 | 63.468978 | 0.015756 | 204 |
| 18 | 24.926719 | 1595.114630 | 0.000627 | 0.040118 | 63.992160 | 0.015627 | 216 |
| 19 | 29.802839 | 1920.189249 | 0.000521 | 0.033554 | 64.429743 | 0.015521 | 228 |
| 20 | 35.632816 | 2308.854370 | 0.000433 | 0.028064 | 64.795732 | 0.015433 | 240 |
| 21 | 42.603242 | 2773.549452 | 0.000361 | 0.023472 | 65.101841 | 0.015361 | 252 |
| 22 | 50.937210 | 3329.147335 | 0.000300 | 0.019632 | 65.357866 | 0.015300 | 264 |
| 23 | 60.901454 | 3993.430261 | 0.000250 | 0.016420 | 65.572002 | 0.015250 | 276 |
| 24 | 72.814885 | 4787.658998 | 0.000209 | 0.013733 | 65.751103 | 0.015209 | 288 |
| 25 | 87.058800 | 5737.253308 | 0.000174 | 0.011486 | 65.900901 | 0.015174 | 300 |
| 26 | 104.089083 | 6872.605521 | 0.000146 | 0.009607 | 66.026190 | 0.015146 | 312 |
| 27 | 124.450799 | 8230.053258 | 0.000122 | 0.008035 | 66.130980 | 0.015122 | 324 |
| 28 | 148.795637 | 9853.042439 | 0.000101 | 0.006721 | 66.218625 | 0.015101 | 336 |
| 29 | 177.902767 | 11793.517795 | 0.000085 | 0.005621 | 66.291930 | 0.015085 | 348 |
| 30 | 212.703781 | 14113.585393 | 0.000071 | 0.004701 | 66.353242 | 0.015071 | 360 |
| 31 | 254.312506 | 16887.500372 | 0.000059 | 0.003932 | 66.404522 | 0.015059 | 372 |
| 32 | 304.060653 | 20204.043526 | 0.000049 | 0.003289 | 66.447412 | 0.015049 | 384 |
| 33 | 363.540442 | 24169.362788 | 0.000041 | 0.002751 | 66.483285 | 0.015041 | 396 |
| 34 | 434.655558 | 28910.370554 | 0.000035 | 0.002301 | 66.513289 | 0.015035 | 408 |
| 35 | 519.682084 | 34578.805589 | 0.000029 | 0.001924 | 66.538383 | 0.015029 | 420 |
| 36 | 621.341343 | 41356.089521 | 0.000024 | 0.301609 | 66.559372 | 0.015024 | 432 |
| 37 | 742.887000 | 49459.133344 | 0.000020 | 0.001346 | 66.576927 | 0.015020 | 444 |
| 38 | 888.209197 | 59147.279782 | 0.000017 | 0.001126 | 66.591609 | 0.015017 | 456 |
| 39 | 1061.959056 | 70730.603711 | 0.000014 | 0.000942 | 66.603890 | 0.015014 | 468 |
| 40 | 1269.697544 | 84579.836287 | 0.000012 | 0.000788 | 66.614161 | 0.015012 | 480 |

## MONTHLY COMPOUND INTEREST TABLES

19.00\% ANNUAL INTEREST RATE

|  | 1 <br> AMOUNT OF $\$ 1$ AT COMPOUND interest | ```2 ACCUMULATION OF $1 PER PERICO``` | $\begin{aligned} & 3 \\ & \text { SINKING } \\ & \text { FUND } \\ & \text { FACTOR } \end{aligned}$ | 4 PRESENT VALUE REVERSIOW OF $\$ 1$ | 5 <br> PRESENT VALUE ORD. ANNUITY $\$ 1$ PER PERICO | $\begin{gathered} 6 \\ \text { INSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE \$1 } \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MONTHS |  |  |  |  |  |  | MONTHS |
| 1 | 1.015833 | 1.000000 | 1.000000 | 0.984413 | 0.984413 | 1.015833 | 1 |
| 2 | 1.031917 | 2.015833 | 0.496073 | 0.969070 | 1.953483 | 0.511906 | 2 |
| 3 | 1.048256 | 3.047751 | 0.328111 | 0.953965 | 2.907449 | 0.343944 | 3 |
| 4 | 1.064853 | 4.096007 | 0.244140 | 0.939096 | 3.846545 | 0.259974 | 4 |
| 5 | 1.081714 | 5.160860 | 0.193766 | 0.924459 | 4.771004 | 0.209599 | 5 |
| 6 | 1.098841 | 6.242574 | 0.160190 | 0.910050 | 5.681054 | 0.176024 | 6 |
| 7 | 1.116239 | 7.341415 | 0.136214 | 0.895865 | 6.576920 | 0.152047 | 7 |
| 8 | 1.133913 | 8.457654 | 0.118236 | 0.881902 | 7.458822 | 0.134069 | 8 |
| 9 | 1.151866 | 9.591566 | 0.104258 | 0.868156 | 8.326978 | 0.120092 | 9 |
| 10 | 1.170104 | 10.743433 | 0.093080 | 0.854625 | 9.181602 | 0.108913 | 10 |
| 11 | 1.188631 | 11.913537 | 0.083938 | 0.841304 | 10.022906 | 0.099771 | 11 |
| 12 | 1.207451 | 13.102168 | 0.076323 | 0.828191 | 10.851097 | 0.092157 | 12 |
| YEARS |  |  |  |  |  |  | MONTHS |
| 1 | 1.207451 | 13.102168 | 0.076323 | 0.828191 | 10.851097 | 0.092157 | 12 |
| 2 | 1.457938 | 28.922394 | 0.034575 | 0.685900 | 19.837878 | 0.050409 | 24 |
| 3 | 1.760389 | 48.024542 | 0.020823 | 0.568056 | 27.280649 | 0.036656 | 36 |
| 4 | 2.125583 | 71.089450 | 0.014067 | 0.470459 | 33.444684 | 0.029900 | 48 |
| 5 | 2.566537 | 98.939196 | 0.010107 | 0.389630 | 38.549682 | 0.025941 | 60 |
| 6 | 3.098968 | 132.566399 | 0.007543 | 0.322688 | 42.777596 | 0.023377 | 72 |
| 7 | 3.741852 | 173.169599 | 0.005775 | 0.267247 | 46.279115 | 0.021608 | 84 |
| 8 | 4.518103 | 222.195973 | 0.004501 | 0.221332 | 49.179042 | 0.020334 | 96 |
| 9 | 5.455388 | 281.392918 | 0.003554 | 0.183305 | 51.580735 | 0.019387 | 108 |
| 10 | 6.587114 | 352.870328 | 0.002834 | 0.151812 | 53.569796 | 0.018667 | 120 |
| 11 | 7.953617 | 439.175798 | 0.002277 | 0.125729 | 55.217118 | 0.018110 | 132 |
| 12 | 9.603603 | 543.385424 | 0.001840 | 0.104128 | 56.581415 | 0.017674 | 144 |
| 13 | 11.595879 | 669.213441 | 0.001494 | 0.086238 | 57.711314 | 0.017328 | 156 |
| 14 | 14.001456 | 821.144606 | 0.001218 | 0.071421 | 58.647086 | 0.017051 | 168 |
| 15 | 16.906072 | 1004.594042 | 0.000995 | 0.059150 | 59.422084 | 0.016829 | 180 |
| 16 | 20.413254 | 1226.100247 | 0.000816 | 0.048988 | 60.063930 | 0.016649 | 192 |
| 17 | 24.648004 | 1493.558135 | 0.000670 | 0.040571 | 60.595501 | 0.016503 | 204 |
| 18 | 29.761257 | 1816.500430 | 0.000551 | 0.033601 | 61.035743 | 0.016384 | 216 |
| 19 | 35.935259 | 2206.437425 | 0.000453 | 0.027828 | 61.400348 | 0.016287 | 228 |
| 20 | 43.390065 | 2677.267240 | 0.000374 | 0.023047 | 61.702310 | 0.016207 | 240 |
| 21 | 52.391377 | 3245.771169 | 0.000308 | 0.019087 | 61.952393 | 0.016141 | 252 |
| 22 | 63.260020 | 3932.211806 | 0.000254 | 0.015808 | 62.159509 | 0.016088 | 264 |
| 23 | 76.383375 | 4761.055238 | 0.000210 | 0.013092 | 62.331041 | 0.016043 | 276 |
| 24 | 92.229182 | 5761.843068 | 0.000174 | 0.010843 | 62.473102 | 0.016007 | 288 |
| 25 | 111.362218 | 6970.245332 | 0.000143 | 0.008980 | 62.590755 | 0.015977 | 300 |
| 26 | 134.464421 | 8429.331851 | 0.000119 | 0.007437 | 62.688195 | 0.015952 | 312 |
| 27 | 162.359199 | 10191.107326 | 0.000098 | 0.006159 | 62.768894 | 0.015931 | 324 |
| 28 | 196.040777 | 12318.364881 | 0.000081 | 0.005101 | 62.835728 | 0.015915 | 336 |
| 29 | 236.709632 | 14886.924139 | 0.000067 | 0.004225 | 62.891079 | 0.015901 | 348 |
| 30 | 285.815282 | 17988.333579 | 0.000056 | 0.003499 | 62.936920 | 0.015889 | 360 |
| 31 | 345.107947 | 21733.133503 | 0.000046 | 0.002898 | 62.974886 | 0.015879 | 372 |
| 32 | 416.700935 | 26254.795909 | 0.000038 | 0.002400 | 63.006328 | 0.015871 | 384 |
| 33 | 503.145960 | 31714.481694 | 0.000032 | 0.001987 | 63.032369 | 0.015865 | 396 |
| 34 | 607.524092 | 38306.784745 | 0.000026 | 0.001646 | 63.053935 | 0.015859 | 408 |
| 35 | 733.555571 | 46266.667644 | 0.000022 | 0.001363 | 63.071796 | 0.015855 | 420 |
| 36 | 885.732406 | 55877.836195 | 0.000018 | 0.001129 | 63.086589 | 0.015851 | 432 |
| 37 | 1069.478478 | 67482.851256 | 0.000015 | 0.000935 | 63.098840 | 0.015848 | 444 |
| 38 | 1291.342856 | 81495.338274 | 0.000012 | 0.000774 | 63.108986 | 0.015846 | 456 |
| 39 | 1559.233220 | 98414.729710 | 0.000010 | 0.000641 | 63.117389 | 0.015843 | 468 |
| 40 | 1882.697708 | 118844.065787 | 0.000008 | 0.000531 | 63.124348 | 0.015842 | 480 |

## MONTHLY COMPOUND INTEREST TABLES

20.00\% ANNUAL INTEREST RATE
$1.6667 \%$ MOWTHLY EFFECTIVE INTEREST RATE

|  | 1 <br> AMOUNT OF $\$ 1$ AT COMPOUND INTEREST | ```ACCUMNLATION OF $1 PER PERIOD``` | $\begin{aligned} & 3 \\ & \text { SINKING } \\ & \text { FUND } \\ & \text { FACTOR } \end{aligned}$ | 4 present value REVERSION OF \$1 | 5 <br> PRESENT VALUE ORD. ANNUITY \$1 PER PERICO | $\begin{gathered} 6 \\ \text { INSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE } \$ 1 \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MONTHS |  |  |  |  |  |  | MONTHS |
| 1 | 1.016667 | 1.000000 | 1.000000 | 0.983607 | 0.983607 | 1.016667 | 1 |
| 2 | 1.033611 | 2.016667 | 0.495868 | 0.967482 | 1.951088 | 0.512534 | 2 |
| 3 | 1.050838 | 3.050278 | 0.327839 | 0.951622 | 2.902710 | 0.344506 | 3 |
| 4 | 1.068352 | 4.101116 | 0.243836 | 0.936021 | 3.838731 | 0.260503 | 4 |
| 5 | 1.086158 | 5.169468 | 0.193444 | 0.920677 | 4.759408 | 0.210110 | 5 |
| 6 | 1.104260 | 6.255625 | 0.159856 | 0.905583 | 5.664991 | 0.176523 | 6 |
| 7 | 1.122665 | 7.359886 | 0.135872 | 0.890738 | 6.555729 | 0.152538 | 7 |
| 8 | 1.141376 | 8.482551 | 0.117889 | 0.876136 | 7.431865 | 0.134556 | 8 |
| 9 | 1.160399 | 9.623926 | 0.103908 | 0.861773 | 8.293637 | 0.120574 | 9 |
| 10 | 1.179739 | 10.784325 | 0.092727 | 0.847645 | 9.141283 | 0.109394 | 10 |
| 11 | 1.199401 | 11.964064 | 0.083584 | 0.833749 | 9.975032 | 0.100250 | 11 |
| 12 | 1.219391 | 13.163465 | 0.075968 | 0.820081 | 10.795113 | 0.092635 | 12 |
| YEARS |  |  |  |  |  |  | MONTHS |
| 1 | 1.219391 | 13.163465 | 0.075968 | 0.820081 | 10.795113 | 0.092635 | 12 |
| 2 | 1.486915 | 29.214877 | 0.034229 | 0.672534 | 19.647986 | 0.050896 | 24 |
| 3 | 1.813130 | 48.787826 | 0.020497 | 0.551532 | 26.908062 | 0.037164 | 36 |
| 4 | 2.210915 | 72.654905 | 0.013764 | 0.452301 | 32.861916 | 0.030430 | 48 |
| 5 | 2.695970 | 101.758208 | 0.009827 | 0.370924 | 37.744561 | 0.026494 | 60 |
| 6 | 3.287442 | 137.246517 | 0.007286 | 0.304188 | 41.748727 | 0.023953 | 72 |
| 7 | 4.008677 | 180.520645 | 0.005540 | 0.249459 | 45.032470 | 0.022206 | 84 |
| 8 | 4.888145 | 233.288730 | 0.004287 | 0.204577 | 47.725406 | 0.020953 | 96 |
| 9 | 5.960561 | 297.633662 | 0.003360 | 0.167769 | 49.933833 | 0.020027 | 108 |
| 10 | 7.268255 | 376.095300 | 0.002659 | 0.137585 | 51.744924 | 0.019326 | 120 |
| 11 | 8.862845 | 471.770720 | 0.002120 | 0.112831 | 53.230165 | 0.018786 | 132 |
| 12 | 10.807275 | 588.436476 | 0.001699 | 0.092530 | 54.448184 | 0.018366 | 144 |
| 13 | 13.178294 | 730.697658 | 0.001369 | 0.075882 | 55.447059 | 0.018035 | 156 |
| 14 | 16.069495 | 904.169675 | 0.001106 | 0.062230 | 56.266217 | 0.017773 | 168 |
| 15 | 19.594998 | 1115.699905 | 0.000896 | 0.051033 | 56.937994 | 0.017563 | 180 |
| 16 | 23.893966 | 1373.637983 | 0.000728 | 0.041852 | 57.488906 | 0.017395 | 192 |
| 17 | 29.136090 | 1688.165376 | 0.000592 | 0.034322 | 57.940698 | 0.017259 | 204 |
| 18 | 35.528288 | 2071.697274 | 0.000483 | 0.028147 | 58.311205 | 0.017149 | 216 |
| 19 | 43.322878 | 2539.372652 | 0.000394 | 0.023082 | 58.615050 | 0.017060 | 228 |
| 20 | 52.827531 | 3109.651838 | 0.000322 | 0.018930 | 58.864229 | 0.016988 | 240 |
| 21 | 64.417420 | 3805.045193 | 0.000263 | 0.015524 | 59.068575 | 0.016929 | 252 |
| 22 | 78.550028 | 4653.001652 | 0.000215 | 0.012731 | 59.236156 | 0.016882 | 264 |
| 23 | 95.783203 | 5686.992197 | 0.000176 | 0.010440 | 59.373585 | 0.016843 | 276 |
| 24 | 116.797184 | 6947.831050 | 0.000144 | 0.008562 | 59.486289 | 0.016811 | 288 |
| 25 | 142.421445 | 8485.286707 | 0.000118 | 0.007021 | 59.578715 | 0.016785 | 300 |
| 26 | 173.667440 | 10360.046428 | 0.000097 | 0.005758 | 59.654512 | 0.016763 | 312 |
| 27 | 211.768529 | 12646.111719 | 0.000079 | 0.004722 | 59.716672 | 0.016746 | 324 |
| 28 | 258.228656 | 15433.719354 | 0.000065 | 0.003873 | 59.767648 | 0.016731 | 336 |
| 29 | 314.881721 | 18832.903252 | 0.000053 | 0.003176 | 59.809452 | 0.016720 | 348 |
| 30 | 383.963963 | 22977.837794 | 0.000044 | 0.002604 | 59.843735 | 0.016710 | 360 |
| 31 | 468.202234 | 28032.134021 | 0.000036 | 0.002136 | 59.871850 | 0.016702 | 372 |
| 32 | 570.921630 | 34195.297782 | 0.000029 | 0.001752 | 59.894907 | 0.016696 | 384 |
| 33 | 696.176745 | 41710.604726 | 0.000024 | 0.001436 | 59.913815 | 0.016691 | 396 |
| 34 | 848.911717 | 50874.703014 | 0.000020 | 0.001178 | 59.929321 | 0.016686 | 408 |
| 35 | 1035.155379 | 62049.322767 | 0.000016 | 0.000966 | 59.942038 | 0.016683 | 420 |
| 36 | 1262.259241 | 75675.554472 | 0.000013 | 0.000792 | 59.952466 | 0.016680 | 432 |
| 37 | 1539.187666 | 92291.259933 | 0.000011 | 0.000650 | 59.961018 | 0.016678 | 444 |
| 38 | 1876.871717 | 112552.303043 | 0.000009 | 0.000533 | 59.968032 | 0.016676 | 456 |
| 39 | 2288.640640 | 137258.438381 | 0.000007 | 0.000437 | 59.973784 | 0.016674 | 468 |
| 40 | 2790.747993 | 167384.879555 | 0.000006 | 0.000358 | 59.978500 | 0.016673 | 480 |

APPENDIX
A

## Annual Compound Interest Tables

## ANNUAL COMPOUND INTEREST TABLES

6.00\% ANNUAL INTEREST RATE


ANNUAL COMPOUND INTEREST TABLES
$7.00 \%$ ANNUAL INTEREST RATE

|  | 1 | 2 | 3 | 4 | 5 | 6 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | AMOUNT OF \$1 | accumulation | SINKING | present value | present value | Installment |  |
|  | AT COMPOUND | OF \$1 | FUND | REVERSIOW | ORD. ANNUITY | T0 |  |
|  | INTEREST | PER PERICO | FACTOR | Of \$1 | \$1 PER PERIOD | AMORTIZE \$1 |  |
| YEARS |  |  |  |  |  |  | YEARS |
| 1 | 1.070000 | 1.000000 | 1.000000 | 0.934579 | 0.934579 | 1.070000 | 1 |
| 2 | 1.144900 | 2.070000 | 0.483092 | 0.873439 | 1.808018 | 0.553092 | 2 |
| 3 | 1.225043 | 3.214900 | 0.311052 | 0.816298 | 2.624316 | 0.381052 | 3 |
| 4 | 1.310796 | 4.439943 | 0.225228 | 0.762895 | 3.387211 | 0.295228 | 4 |
| 5 | 1.402552 | 5.750739 | 0.173891 | 0.712986 | 4.100197 | 0.243891 | 5 |
| 6 | 1.500730 | 7.153291 | 0.139796 | 0.666342 | 4.766540 | 0.209796 | 6 |
| 7 | 1.605781 | 8.654021 | 0.115553 | 0.622750 | 5.389289 | 0.185553 | 7 |
| 8 | 1.718186 | 10.259803 | 0.097468 | 0.582009 | 5.971299 | 0.167468 | 8 |
| 9 | 1.838459 | 11.977989 | 0.083486 | 0.543934 | 6.515232 | 0.153486 | 9 |
| 10 | 1.967151 | 13.816448 | 0.072378 | 0.508349 | 7.023582 | 0.142378 | 10 |
| 11 | 2.104852 | 15.783599 | 0.063357 | 0.475093 | 7.498674 | 0.133357 | 11 |
| 12 | 2.252192 | 17.888451 | 0.055902 | 0.444012 | 7.942686 | 0.125902 | 12 |
| 13 | 2.409845 | 20.140643 | 0.049651 | 0.414964 | 8.357651 | 0.119651 | 13 |
| 14 | 2.578534 | 22.550488 | 0.044345 | 0.387817 | 8.745468 | 0.114345 | 14 |
| 15 | 2.759032 | 25.129022 | 0.039795 | 0.362446 | 9.107914 | 0.109795 | 15 |
| 16 | 2.952164 | 27.888054 | 0.035858 | 0.338735 | 9.446649 | 0.105858 | 16 |
| 17 | 3.158815 | 30.840217 | 0.032425 | 0.316574 | 9.763223 | 0.102425 | 17 |
| 18 | 3.379932 | 33.999033 | 0.029413 | 0.295864 | 10.059087 | 0.099413 | 18 |
| 19 | 3.616528 | 37.378965 | 0.026753 | 0.276508 | 10.335595 | 0.096753 | 19 |
| 20 | 3.869684 | 40.995492 | 0.024393 | 0.258419 | 10.594014 | 0.094393 | 20 |
| 21 | 4.140562 | 44.865177 | 0.022289 | 0.241513 | 10.835527 | 0.092289 | 21 |
| 22 | 4.430402 | 49.005739 | 0.020406 | 0.225713 | 11.061240 | 0.090406 | 22 |
| 23 | 4.740530 | 53.436141 | 0.018714 | 0.210947 | 11.272187 | 0.088714 | 23 |
| 24 | 5.072367 | 58.176671 | 0.017189 | 0.197147 | 11.469334 | 0.087189 | 24 |
| 25 | 5.427433 | 63.249038 | 0.015811 | 0.184249 | 11.653583 | 0.085811 | 25 |
| 26 | 5.807353 | 68.676470 | 0.014561 | 0.172195 | 11.825779 | 0.084561 | 26 |
| 27 | 6.213868 | 74.483823 | 0.013426 | 0.160930 | 11.986709 | 0.083426 | 27 |
| 28 | 6.648838 | 80.697691 | 0.012392 | 0.150402 | 12.137111 | 0.082392 | 28 |
| 29 | 7.114257 | 87.346529 | 0.011449 | 0.140563 | 12.277674 | 0.081449 | 29 |
| 30 | 7.612255 | 94.460786 | 0.010586 | 0.131367 | 12.409041 | 0.080586 | 30 |
| 31 | 8.145113 | 102.073041 | 0.009797 | 0.122773 | 12.531814 | 0.079797 | 31 |
| 32 | 8.715271 | 110.218154 | 0.009073 | 0.114741 | 12.646555 | 0.079073 | 32 |
| 33 | 9.325340 | 118.933425 | 0.008408 | 0.107235 | 12.753790 | 0.078408 | 33 |
| 34 | 9.978114 | 128.258765 | 0.007797 | 0.100219 | 12.854009 | 0.077797 | 34 |
| 35 | 10.676581 | 138.236878 | 0.007234 | 0.093663 | 12.947672 | 0.077234 | 35 |
| 36 | 11.423942 | 148.913460 | 0.006715 | 0.087535 | 13.035208 | 0.076715 | 36 |
| 37 | 12.223618 | 160.337402 | 0.006237 | 0.081809 | 13.117017 | 0.076237 | 37 |
| 38 | 13.079271 | 172.561020 | 0.005795 | 0.076457 | 13.193473 | 0.075795 | 38 |
| 39 | 13.994820 | 185.640292 | 0.005387 | 0.071455 | 13.264928 | 0.075387 | 39 |
| 40 | 14.974458 | 199.635112 | 0.005009 | 0.066780 | 13.331709 | 0.075009 | 40 |
| 41 | 16.022670 | 214.609570 | 0.004660 | 0.062412 | 13.394120 | 0.074660 | 41 |
| 42 | 17.144257 | 230.632240 | 0.004336 | 0.058329 | 13.452449 | 0.074336 | 42 |
| 43 | 18.344355 | 247.776496 | 0.004036 | 0.054513 | 13.506962 | 0.074036 | 43 |
| 44 | 19.628460 | 266.120851 | 0.003758 | 0.050946 | 13.557908 | 0.073758 | 44 |
| 45 | 21.002452 | 285.749311 | 0.003500 | 0.047613 | 13.605522 | 0.073500 | 45 |
| 46 | 22.472623 | 306.751763 | 0.003260 | 0.044499 | 13.650020 | 0.073260 | 46 |
| 47 | 24.045707 | 329.224386 | 0.003037 | 0.041587 | 13.691608 | 0.073037 | 47 |
| 48 | 25.728907 | 353.270093 | 0.002831 | 0.038867 | 13.730474 | 0.072831 | 48 |
| 49 | 27.529930 | 378.999000 | 0.002639 | 0.036324 | 13.766799 | 0.072639 | 49 |
| 50 | 29.457025 | 406.528929 | 0.002460 | 0.033948 | 13.800746 | 0.072460 | 50 |

## ANNUAL COMPOUND INTEREST TABLES

8.00\% ANNUAL INTEREST RATE


ANNUAL COMPOUND INTEREST TABLES
9.00\% ANNUAL INTEREST RATE


## ANNUAL COMPOUND INTEREST TABLES

10.00\% ANNUAL INTEREST RATE

|  | 1 <br> AMOUNT OF $\$ 1$ AT COMPOUND INTEREST | $\begin{aligned} & 2 \\ & \text { ACCUMULATION } \\ & \text { OF } \$ 1 \\ & \text { PER PERIOD } \end{aligned}$ | $\begin{gathered} 3 \\ \text { SINKING } \\ \text { FUND } \\ \text { FACTOR } \end{gathered}$ | 4 <br> PRESENT VALUE REVERSIOW OF \$1 | 5 <br> PRESENT VALUE ORD. ANNUITY \$1 PER PERIOO | $\begin{gathered} 6 \\ \text { INSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE } \$ 1 \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| YEARS |  |  |  |  |  |  | Years |
| 1 | 1.100000 | 1.000000 | 1.000000 | 0.909091 | 0.909091 | 1.100000 | 1 |
| 2 | 1.210000 | 2.100000 | 0.476190 | 0.826446 | 1.735537 | 0.576190 | 2 |
| 3 | 1.331000 | 3.310000 | 0.302115 | 0.751315 | 2.486852 | 0.402115 | 3 |
| 4 | 1.464100 | 4.641000 | 0.215471 | 0.683013 | 3.169865 | 0.315471 | 4 |
| 5 | 1.610510 | 6.105100 | 0.163797 | 0.620921 | 3.790787 | 0.263797 | 5 |
| 6 | 1.771561 | 7.715610 | 0.129607 | 0.564474 | 4.355261 | 0.229607 | 6 |
| 7 | 1.948717 | 9.487171 | 0.105405 | 0.513158 | 4.868419 | 0.205405 | 7 |
| 8 | 2.143589 | 11.435888 | 0.087444 | 0.466507 | 5.334926 | 0.187444 | 8 |
| 9 | 2.357948 | 13.579477 | 0.073641 | 0.424098 | 5.759024 | 0.173641 | 9 |
| 10 | 2.593742 | 15.937425 | 0.062745 | 0.385543 | 6.144567 | 0.162745 | 10 |
| 11 | 2.853117 | 18.531167 | 0.053963 | 0.350494 | 6.495061 | 0.153963 | 11 |
| 12 | 3.138428 | 21.384284 | 0.046763 | 0.318631 | 6.813692 | 0.146763 | 12 |
| 13 | 3.452271 | 24.522712 | 0.040779 | 0.289664 | 7.103356 | 0.140779 | 13 |
| 14 | 3.797498 | 27.974983 | 0.035746 | 0.263331 | 7.366687 | 0.135746 | 14 |
| 15 | 4.177248 | 31.772482 | 0.031474 | 0.239392 | 7.606080 | 0.131474 | 15 |
| 16 | 4.594973 | 35.949730 | 0.027817 | 0.217629 | 7.823709 | 0.127817 | 16 |
| 17 | 5.054470 | 40.544703 | 0.024664 | 0.197845 | 8.021553 | 0.124664 | 17 |
| 18 | 5.559917 | 45.599173 | 0.021930 | 0.179859 | 8.201412 | 0.121930 | 18 |
| 19 | 6.115909 | 51.159090 | 0.019547 | 0.163508 | 8.364920 | 0.119547 | 19 |
| 20 | 6.727500 | 57.274999 | 0.017460 | 0.148644 | 8.513564 | 0.117460 | 20 |
| 21 | 7.400250 | 64.002499 | 0.015624 | 0.135131 | 8.648694 | 0.115624 | 21 |
| 22 | 8.140275 | 71.402749 | 0.014005 | 0.122846 | 8.771540 | 0.114005 | 22 |
| 23 | 8.954302 | 79.543024 | 0.012572 | 0.111678 | 8.883218 | 0.112572 | 23 |
| 24 | 9.849733 | 88.497327 | 0.011300 | 0.101526 | 8.984744 | 0.111300 | 24 |
| 25 | 10.834706 | 98.347059 | 0.010168 | 0.092296 | 9.077040 | 0.110168 | 25 |
| 26 | 11.918177 | 109.181765 | 0.009159 | 0.083905 | 9.160945 | 0.109159 | 26 |
| 27 | 13.109994 | 121.099942 | 0.008258 | 0.076278 | 9.237223 | 0.108258 | 27 |
| 28 | 14.420994 | 134.209936 | 0.007451 | 0.069343 | 9.306567 | 0.107451 | 28 |
| 29 | 15.863093 | 148.630930 | 0.006728 | 0.063039 | 9.369606 | 0.106728 | 29 |
| 30 | 17.449402 | 164.494023 | 0.006070 | 0.057309 | 9.426914 | 0.106079 | 30 |
| 31 | 19.194342 | 181.943425 | 0.005496 | 0.052099 | 9.479013 | 0.105496 | 31 |
| 32 | 21.113777 | 201.137767 | 0.004972 | 0.047362 | 9.526376 | 0.104972 | 32 |
| 33 | 23.225154 | 222.251544 | 0.004499 | 0.043057 | 9.569432 | 0.104499 | 33 |
| 34 | 25.547670 | 245.476699 | 0.004074 | 0.039143 | 9.608575 | 0.104074 | 34 |
| 35 | 28.102437 | 271.024368 | 0.003690 | 0.035584 | 9.644159 | 0.103690 | 35 |
| 36 | 30.912681 | 299.126805 | 0.003343 | 0.032349 | 9.676508 | 0.103343 | 36 |
| 37 | 34.003949 | 330.039486 | 0.003030 | 0.029408 | 9.705917 | 0.103030 | 37 |
| 38 | 37.404343 | 364.043434 | 0.002747 | 0.026735 | 9.732651 | 0.102747 | 38 |
| 39 | 41.144778 | 401.447778 | 0.002491 | 0.024304 | 9.756956 | 0.102491 | 39 |
| 40 | 45.259256 | 442.592556 | 0.002259 | 0.022095 | 9.779051 | 0.102259 | 40 |
| 41 | 49.785181 | 487.851811 | 0.002050 | 0.020086 | 9.799137 | 0.102050 | 41 |
| 42 | 54.763699 | 537.636992 | 0.001860 | 0.018260 | 9.817397 | 0.101860 | 42 |
| 43 | 60.240069 | 592.400692 | 0.001688 | 0.016600 | 9.833998 | 0.101688 | 43 |
| 44 | 66.264076 | 652.640761 | 0.001532 | 0.015091 | 9.849089 | 0.101532 | 44 |
| 45 | 72.890484 | 718.904837 | 0.001391 | 0.013719 | 9.862808 | 0.101391 | 45 |
| 46 | 80.179532 | 791.795321 | 0.001263 | 0.012472 | 9.875280 | 0.101263 | 46 |
| 47 | 88.197485 | 871.974853 | 0.001147 | 0.011338 | 9.886618 | 0.101147 | 47 |
| 48 | 97.017234 | 960.172338 | 0.001041 | 0.010307 | 9.896926 | 0.101041 | 48 |
| 49 | 106.718957 | 1057.189572 | 0.000946 | 0.009370 | 9.906296 | 0.100946 | 49 |
| 50 | 117.390853 | 1163.908529 | 0.000859 | 0.008519 | 9.914814 | 0.100859 | 50 |

ANNUAL COMPOUND INTEREST TABLES
11.00\% ANNUAL INTEREST RATE

|  | 1 <br> AMOUNT OF \$1 AT COMPOUND INTEREST | ```OF $1 PER PERIOD``` | $\begin{gathered} 3 \\ \text { SINKING } \\ \text { FUND } \\ \text { FACTOR } \end{gathered}$ | PRESENT VALUE REVERSION OF \$1 | 5 <br> PRESENT VALUE ORD. ANNUITY <br> \$1 PER PERICO | $\begin{gathered} 6 \\ \text { INSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE } \$ 1 \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| YEARS |  |  |  |  |  |  | Years |
| 1 | 1.110000 | 1.000000 | 1.000000 | 0.900901 | 0.900901 | 1.110000 | 1 |
| 2 | 1.232100 | 2.110000 | 0.473934 | 0.811622 | 1.712523 | 0.583934 | 2 |
| 3 | 1.367631 | 3.342100 | 0.299213 | 0.731191 | 2.443715 | 0.409213 | 3 |
| 4 | 1.518070 | 4.709731 | 0.212326 | 0.658731 | 3.102446 | 0.322326 | 4 |
| 5 | 1.685058 | 6.227801 | 0.160570 | 0.593451 | 3.695897 | 0.270570 | 5 |
| 6 | 1.870415 | 7.912860 | 0.126377 | 0.534641 | 4.230538 | 0.236377 | 6 |
| 7 | 2.076160 | 9.783274 | 0.102215 | 0.481658 | 4.712196 | 0.212215 | 7 |
| 8 | 2.304538 | 11.859434 | 0.084321 | 0.433926 | 5.146123 | 0.194321 | 8 |
| 9 | 2.558037 | 14.163972 | 0.070602 | 0.390925 | 5.537048 | 0.180602 | 9 |
| 10 | 2.839421 | 16.722009 | 0.059801 | 0.352184 | 5.889232 | 0.169801 | 10 |
| 11 | 3.151757 | 19.561430 | 0.051121 | 0.317283 | 6.206515 | 0.161121 | 11 |
| 12 | 3.498451 | 22.713187 | 0.044027 | 0.285841 | 6.492356 | 0.154027 | 12 |
| 13 | 3.883280 | 26.211638 | 0.038151 | 0.257514 | 6.749870 | 0.148151 | 13 |
| 14 | 4.310441 | 30.094918 | 0.033228 | 0.231995 | 6.981865 | 0.143228 | 14 |
| 15 | 4.784589 | 34.405359 | 0.029065 | 0.209004 | 7.190870 | 0.139065 | 15 |
| 16 | 5.310894 | 39.189948 | 0.025517 | 0.188292 | 7.379162 | 0.135517 | 16 |
| 17 | 5.895093 | 44.500843 | 0.022471 | 0.169633 | 7.548794 | 0.132471 | 17 |
| 18 | 6.543553 | 50.395936 | 0.019843 | 0.152822 | 7.701617 | 0.129843 | 18 |
| 19 | 7.263344 | 56.939488 | 0.017563 | 0.137678 | 7.839294 | 0.127563 | 19 |
| 20 | 8.062312 | 64.202832 | 0.015576 | 0.124034 | 7.963328 | 0.125576 | 20 |
| 21 | 8.949166 | 72.265144 | 0.013838 | 0.111742 | 8.075070 | 0.123838 | 21 |
| 22 | 9.933574 | 81.214309 | 0.012313 | 0.100669 | 8.175739 | 0.122313 | 22 |
| 23 | 11.026267 | 91.147884 | 0.010971 | 0.090693 | 8.266432 | 0.120971 | 23 |
| 24 | 12.239157 | 102.174151 | 0.009787 | 0.081705 | 8.348137 | 0.119787 | 24 |
| 25 | 13.585464 | 114.413307 | 0.008740 | 0.073608 | 8.421745 | 0.118740 | 25 |
| 26 | 15.079865 | 127.998771 | 0.007813 | 0.066314 | 8.488058 | 0.117813 | 26 |
| 27 | 16.738650 | 143.078636 | 0.006989 | 0.059742 | 8.547800 | 0.116989 | 27 |
| 28 | 18.579901 | 159.817286 | 0.006257 | 0.053822 | 8.601622 | 0.116257 | 28 |
| 29 | 20.623691 | 178.397187 | 0.005605 | 0.048488 | 8.650110 | 0.115605 | 29 |
| 30 | 22.892297 | 199.020878 | 0.005025 | 0.043683 | 8.693793 | 0.115025 | 30 |
| 31 | 25.410449 | 221.913174 | 0.004506 | 0.039354 | 8.733146 | 0.114506 | 31 |
| 32 | 28.205599 | 247.323624 | 0.004043 | 0.035454 | 8.768600 | 0.114043 | 32 |
| 33 | 31.308214 | 275.529222 | 0.003629 | 0.031940 | 8.800541 | 0.113629 | 33 |
| 34 | 34.752118 | 306.837437 | 0.003259 | 0.028775 | 8.829316 | 0.113259 | 34 |
| 35 | 38.574851 | 341.589555 | 0.002927 | 0.025924 | 8.855240 | 0.112927 | 35 |
| 36 | 42.818085 | 380.164406 | 0.002630 | 0.023355 | 8.878594 | 0.112630 | 36 |
| 37 | 47.528074 | 422.982490 | 0.002364 | 0.021040 | 8.899635 | 0.112364 | 37 |
| 38 | 52.756162 | 470.510564 | 0.002125 | 0.018955 | 8.918590 | 0.112125 | 38 |
| 39 | 58.559340 | 523.266726 | 0.001911 | 0.017077 | 8.935666 | 0.111911 | 39 |
| 40 | 65.000867 | 581.826066 | 0.001719 | 0.015384 | 8.951051 | 0.111719 | 40 |
| 41 | 72.150963 | 646.826934 | 0.001546 | 0.013860 | 8.964911 | 0.111546 | 41 |
| 42 | 80.087569 | 718.977896 | 0.001391 | 0.012486 | 8.977397 | 0.111391 | 42 |
| 43 | 88.897201 | 799.065465 | 0.001251 | 0.011249 | 8.988646 | 0.111251 | 43 |
| 44 | 98.675893 | 887.962666 | 0.001126 | 0.010134 | 8.998780 | 0.111126 | 44 |
| 45 | 109.530242 | 986.638559 | 0.001014 | 0.009130 | 9.007910 | 0.111014 | 45 |
| 46 | 121.578568 | 1096.168801 | 0.000912 | 0.008225 | 9.016135 | 0.110912 | 46 |
| 47 | 134.952211 | 1217.747369 | 0.000821 | 0.007410 | 9.023545 | 0.110821 | 47 |
| 48 | 149.796954 | 1352.699580 | 0.000739 | 0.006676 | 9.030221 | 0.110739 | 48 |
| 49 | 166.274619 | 1502.496533 | 0.000666 | 0.006014 | 9.036235 | 0.110666 | 49 |
| 50 | 184.564827 | 1668.771152 | 0.000599 | 0.005418 | 9.041653 | 0.110599 | 50 |

## ANNUAL COMPOUND INTEREST TABLES

12.00\% anNual interest rate

|  | 1 <br> AMOUNT OF \$1 AT COMPOUND INTEREST | ```2 ACCUMULATION OF $1 PER PERIOD``` | 3 <br> SINKING <br> FUND <br> FACTOR | ```MRESENT Value REVERSIOW OF $1``` | 5 <br> PRESENT VALUE ORD. ANNUITY $\$ 1$ PER PERICO | $\begin{gathered} 6 \\ \text { INSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE \$1 } \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| YEARS |  |  |  |  |  |  | YEARS |
| 1 | 1.120000 | 1.000000 | 1.000000 | 0.892857 | 0.892857 | 1.120000 | 1 |
| 2 | 1.254400 | 2.120000 | 0.471698 | 0.797194 | 1.690051 | 0.591698 | 2 |
| 3 | 1.404928 | 3.374400 | 0.296349 | 0.711780 | 2.401831 | 0.416349 | 3 |
| 4 | 1.573519 | 4.779328 | 0.209234 | 0.635518 | 3.037349 | 0.329234 | 4 |
| 5 | 1.762342 | 6.352847 | 0.157410 | 0.567427 | 3.604776 | 0.277410 | 5 |
| 6 | 1.973823 | 8.115189 | 0.123226 | 0.506631 | 4.111407 | 0.243226 | 6 |
| 7 | 2.210681 | 10.089012 | 0.099118 | 0.452349 | 4.563757 | 0.219118 | 7 |
| 8 | 2.475963 | 12.299693 | 0.081303 | 0.403883 | 4.967640 | 0.201303 | 8 |
| 9 | 2.773079 | 14.775656 | 0.067679 | 0.360610 | 5.328250 | 0.187679 | 9 |
| 10 | 3.105848 | 17.548735 | 0.056984 | 0.321973 | 5.650223 | 0.176984 | 10 |
| 11 | 3.478550 | 20.654583 | 0.048415 | 0.287476 | 5.937699 | 0.168415 | 11 |
| 12 | 3.895976 | 24.133133 | 0.041437 | 0.256675 | 6.194374 | 0.161437 | 12 |
| 13 | 4.363493 | 28.029109 | 0.035677 | 0.229174 | 6.423548 | 0.155677 | 13 |
| 14 | 4.887112 | 32.392602 | 0.030871 | 0.204620 | 6.628168 | 0.150871 | 14 |
| 15 | 5.473566 | 37.279715 | 0.026824 | 0.182696 | 6.810864 | 0.146824 | 15 |
| 16 | 6.130394 | 42.753280 | 0.023390 | 0.163122 | 6.973986 | 0.143390 | 16 |
| 17 | 6.866041 | 48.883674 | 0.020457 | 0.145644 | 7.119630 | 0.140457 | 17 |
| 18 | 7.689966 | 55.749715 | 0.017937 | 0.130040 | 7.249670 | 0.137937 | 18 |
| 19 | 8.612762 | 63.439681 | 0.015763 | 0.116107 | 7.365777 | 0.135763 | 19 |
| 20 | 9.646293 | 72.052442 | 0.013879 | 0.103667 | 7.469444 | 0.133879 | 20 |
| 21 | 10.803848 | 81.698736 | 0.012240 | 0.092560 | 7.562003 | 0.132240 | 21 |
| 22 | 12.100310 | 92.502584 | 0.010811 | 0.082643 | 7.644646 | 0.130811 | 22 |
| 23 | 13.552347 | 104.602894 | 0.009560 | 0.073788 | 7.718434 | 0.129560 | 23 |
| 24 | 15.178629 | 118.155241 | 0.008463 | 0.065882 | 7.784316 | 0.128463 | 24 |
| 25 | 17.000064 | 133.333870 | 0.007500 | 0.058823 | 7.843139 | 0.127500 | 25 |
| 26 | 19.040072 | 150.333934 | 0.006652 | 0.052521 | 7.895660 | 0.126652 | 26 |
| 27 | 21.324881 | 169.374007 | 0.005904 | 0.046894 | 7.942554 | 0.125904 | 27 |
| 28 | 23.883866 | 190.698887 | 0.005244 | 0.041869 | 7.984423 | 0.125244 | 28 |
| 29 | 26.749930 | 214.582754 | 0.004660 | 0.037383 | 8.021806 | 0.124660 | 29 |
| 30 | 29.959922 | 241.332684 | 0.004144 | 0.033378 | 8.055184 | 0.124144 | 30 |
| 31 | 33.555113 | 271.292606 | 0.003686 | 0.029802 | 8.084986 | 0.123686 | 31 |
| 32 | 37.581726 | 304.847719 | 0.003280 | 0.026609 | 8.111594 | 0.123280 | 32 |
| 33 | 42.091533 | 342.429446 | 0.002920 | 0.023758 | 8.135352 | 0.122920 | 33 |
| 34 | 47.142517 | 384.520979 | 0.002601 | 0.021212 | 8.156564 | 0.122601 | 34 |
| 35 | 52.799620 | 431.663496 | 0.002317 | 0.018940 | 8.175504 | 0.122317 | 35 |
| 36 | 59.135574 | 484.463116 | 0.002064 | 0.016910 | 8.192414 | 0.122064 | 36 |
| 37 | 66.231843 | 543.598690 | 0.001840 | 0.015098 | 8.207513 | 0.121840 | 37 |
| 38 | 74.179664 | 609.830533 | 0.001640 | 0.013481 | 8.220993 | 0.121640 | 38 |
| 39 | 83.081224 | 684.010197 | 0.001462 | 0.012036 | 8.233030 | 0.121462 | 39 |
| 40 | 93.050970 | 767.091420 | 0.001304 | 0.010747 | 8.243777 | 0.121304 | 40 |
| 41 | 104.217087 | 860.142391 | 0.001163 | 0.009595 | 8.253372 | 0.121163 | 41 |
| 42 | 116.723137 | 964.359478 | 0.001037 | 0.008567 | 8.261939 | 0.121037 | 42 |
| 43 | 130.729914 | 1081.082615 | 0.000925 | 0.007649 | 8.269589 | 0.120925 | 43 |
| 44 | 146.417503 | 1211.812529 | 0.000825 | 0.006830 | 8.276418 | 0.120825 | 44 |
| 45 | 163.987604 | 1358.230032 | 0.000736 | 0.006098 | 8.282516 | 0.120736 | 45 |
| 46 | 183.666116 | 1522.217636 | 0.000657 | 0.005445 | 8.287961 | 0.120657 | 46 |
| 47 | 205.706050 | 1705.883752 | 0.000586 | 0.004861 | 8.292822 | 0.120586 | 47 |
| 48 | 230.390776 | 1911.589803 | 0.000523 | 0.004340 | 8.297163 | 0.120523 | 48 |
| 49 | 258.037669 | 2141.980579 | 0.000467 | 0.003875 | 8.301038 | 0.120467 | 49 |
| 50 | 289.002190 | 2400.018249 | 0.000417 | 0.003460 | 8.304498 | 0.120417 | 50 |

## ANNUAL COMPOUND INTEREST TABLES

13.00\% ANNUAL INTEREST RATE

|  | 1 <br> AMOUNT OF \$1 AT COMPOUND INTEREST | ```2 ACCUMULATION OF $1 PER PERIOD``` | $\begin{aligned} & 3 \\ & \text { SINKING } \\ & \text { FUND } \\ & \text { FACTOR } \end{aligned}$ | PRESENT VALUE REVERSION OF $\$ 1$ | 5 <br> PRESENT VALUE ORD. ANNUITY <br> $\$ 1$ PER PERICO | $\begin{gathered} 6 \\ \text { INSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE } \$ 1 \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| YEARS |  |  |  |  |  |  | YEARS |
| 1 | 1.130000 | 1.000000 | 1.000000 | 0.884956 | 0.884956 | 1.130000 | 1 |
| 2 | 1.276900 | 2.130000 | 0.469484 | 0.783147 | 1.668102 | 0.599484 | 2 |
| 3 | 1.442897 | 3.406900 | 0.293522 | 0.693050 | 2.361153 | 0.423522 | 3 |
| 4 | 1.630474 | 4.849797 | 0.206194 | 0.613319 | 2.974471 | 0.336194 | 4 |
| 5 | 1.842435 | 6.480271 | 0.154315 | 0.542760 | 3.517231 | 0.284315 | 5 |
| 6 | 2.081952 | 8.322706 | 0.120153 | 0.480319 | 3.997550 | 0.250153 | 6 |
| 7 | 2.352605 | 10.404658 | 0.096111 | 0.425061 | 4.422610 | 0.226111 | 7 |
| 8 | 2.658444 | 12.757263 | 0.078387 | 0.376160 | 4.798770 | 0.208387 | 8 |
| 9 | 3.004042 | 15.415707 | 0.064869 | 0.332885 | 5.131655 | 0.194869 | 9 |
| 10 | 3.394567 | 18.419749 | 0.054290 | 0.294588 | 5.426243 | 0.184290 | 10 |
| 11 | 3.835861 | 21.814317 | 0.045841 | 0.260698 | 5.686941 | 0.175841 | 11 |
| 12 | 4.334523 | 25.650178 | 0.038986 | 0.230706 | 5.917647 | 0.168986 | 12 |
| 13 | 4.898011 | 29.984701 | 0.033350 | 0.204165 | 6.121812 | 0.163350 | 13 |
| 14 | 5.534753 | 34.882712 | 0.028667 | 0.180677 | 6.302488 | 0.158667 | 14 |
| 15 | 6.254270 | 40.417464 | 0.024742 | 0.159891 | 6.462379 | 0.154742 | 15 |
| 16 | 7.067326 | 46.671735 | 0.021426 | 0.141496 | 6.603875 | 0.151426 | 16 |
| 17 | 7.986078 | 53.739060 | 0.018608 | 0.125218 | 6.729093 | 0.148608 | 17 |
| 18 | 9.024268 | 61.725138 | 0.016201 | 0.110812 | 6.839905 | 0.146201 | 18 |
| 19 | 10.197423 | 70.749406 | 0.014134 | 0.098064 | 6.937969 | 0.144134 | 19 |
| 20 | 11.523088 | 80.946829 | 0.012354 | 0.086782 | 7.024752 | 0.142354 | 20 |
| 21 | 13.021089 | 92.469917 | 0.010814 | 0.076798 | 7.101550 | 0.140814 | 21 |
| 22 | 14.713831 | 105.491006 | 0.009479 | 0.067963 | 7.169513 | 0.139479 | 22 |
| 23 | 16.626629 | 120.204837 | 0.008319 | 0.060144 | 7.229658 | 0.138319 | 23 |
| 24 | 18.788091 | 136.831465 | 0.007308 | 0.053225 | 7.282883 | 0.137308 | 24 |
| 25 | 21.230542 | 155.619556 | 0.006426 | 0.047102 | 7.329985 | 0.136426 | 25 |
| 26 | 23.990513 | 176.850098 | 0.005655 | 0.041683 | 7.371668 | 0.135655 | 26 |
| 27 | 27.109279 | 200.840611 | 0.004979 | 0.036888 | 7.408556 | 0.134979 | 27 |
| 28 | 30.633486 | 227.949890 | 0.004387 | 0.032644 | 7.441200 | 0.134387 | 28 |
| 29 | 34.615839 | 258.583376 | 0.003867 | 0.028889 | 7.470088 | 0.133867 | 29 |
| 30 | 39.115898 | 293.199215 | 0.003411 | 0.025565 | 7.495653 | 0.133411 | 30 |
| 31 | 44.200965 | 332.315113 | 0.003009 | 0.022624 | 7.518277 | 0.133009 | 31 |
| 32 | 49.947090 | 376.516078 | 0.002656 | 0.020021 | 7.538299 | 0.132656 | 32 |
| 33 | 56.440212 | 426.463168 | 0.002345 | 0.017718 | 7.556016 | 0.132345 | 33 |
| 34 | 63.777439 | 482.903380 | 0.002071 | 0.015680 | 7.571696 | 0.132071 | 34 |
| 35 | 72.068506 | 546.680819 | 0.001829 | 0.013876 | 7.585572 | 0.131829 | 35 |
| 36 | 81.437412 | 618.749325 | 0.001616 | 0.012279 | 7.597851 | 0.131616 | 36 |
| 37 | 92.024276 | 700.186738 | 0.001428 | 0.010867 | 7.608718 | 0.131428 | 37 |
| 38 | 103.987432 | 792.211014 | 0.001262 | 0.009617 | 7.618334 | 0.131262 | 38 |
| 39 | 117.505798 | 896.198445 | 0.001116 | 0.008510 | 7.626844 | 0.131116 | 39 |
| 40 | 132.781552 | 1013.704243 | 0.000986 | 0.007531 | 7.634376 | 0.130986 | 40 |
| 41 | 150.043153 | 1146.485795 | 0.000872 | 0.006665 | 7.641040 | 0.130872 | 41 |
| 42 | 169.548763 | 1296.528948 | 0.000771 | 0.005898 | 7.646938 | 0.130771 | 42 |
| 43 | 191.590103 | 1466.077712 | 0.000682 | 0.005219 | 7.652158 | 0.130682 | 43 |
| 44 | 216.496816 | 1657.667814 | 0.000603 | 0.004619 | 7.656777 | 0.130603 | 44 |
| 45 | 244.641402 | 1874. 164630 | 0.000534 | 0.004088 | 7.660864 | 0.130534 | 45 |
| 46 | 276.444784 | 2118.806032 | 0.000472 | 0.003617 | 7.664482 | 0.130472 | 46 |
| 47 | 312.382606 | 2395.250816 | 0.000417 | 0.003201 | 7.667683 | 0.130417 | 47 |
| 48 | 352.992345 | 2707.633422 | 0.000369 | 0.002833 | 7.670516 | 0.130369 | 48 |
| 49 | 398.881350 | 3060.625767 | 0.000327 | 0.002507 | 7.673023 | 0.130327 | 49 |
| 50 | 450.735925 | 3459.507117 | 0.000289 | 0.002219 | 7.675242 | 0.130289 | 50 |

## ANNUAL COMPOUND INTEREST TABLES

14.00\% ANNUAL INTEREST RATE

|  | 1 <br> AMOUNT OF $\$ 1$ AT COMPOUND INTEREST | ```2 ACCUMULATION OF $1 PER PERIOO``` | $\begin{gathered} 3 \\ \text { SINKING } \\ \text { FUND } \\ \text { FACTOR } \end{gathered}$ | 4 <br> PRESENT VALUE REVERSIOW OF $\$ 1$ | 5 <br> PRESENT VALUE ORD. ANNUITY <br> \$1 PER PERICO | $\begin{gathered} 6 \\ \text { INSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE } \$ 1 \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Years |  |  |  |  |  |  | YEARS |
| 1 | 1.140000 | 1.000000 | 1.000000 | 0.877193 | 0.877193 | 1.140000 | 1 |
| 2 | 1.299600 | 2.140000 | 0.467290 | 0.769468 | 1.646661 | 0.607290 | 2 |
| 3 | 1.481544 | 3.439600 | 0.290731 | 0.674972 | 2.321632 | 0.430731 | 3 |
| 4 | 1.688960 | 4.921144 | 0.203205 | 0.592080 | 2.913712 | 0.343205 | 4 |
| 5 | 1.925415 | 6.610104 | 0.151284 | 0.519369 | 3.433081 | 0.291284 | 5 |
| 6 | 2.194973 | 8.535519 | 0.117157 | 0.455587 | 3.888668 | 0.257157 | 6 |
| 7 | 2.502269 | 10.730491 | 0.093192 | 0.399637 | 4.288305 | 0.233192 | 7 |
| 8 | 2.852586 | 13.232760 | 0.075570 | 0.350559 | 4.638864 | 0.215570 | 8 |
| 9 | 3.251949 | 16.085347 | 0.062168 | 0.307508 | 4.946372 | 0.202168 | 9 |
| 10 | 3.707221 | 19.337295 | 0.051714 | 0.269744 | 5.216116 | 0.191714 | 10 |
| 11 | 4.226232 | 23.044516 | 0.043394 | 0.236617 | 5.452733 | 0.183394 | 11 |
| 12 | 4.817905 | 27.270749 | 0.036669 | 0.207559 | 5.660292 | 0.176669 | 12 |
| 13 | 5.492411 | 32.088654 | 0.031164 | 0.182069 | 5.842362 | 0.171164 | 13 |
| 14 | 6.261349 | 37.581065 | 0.026609 | 0.159710 | 6.002072 | 0.166609 | 14 |
| 15 | 7.137938 | 43.842414 | 0.022809 | 0.140096 | 6.142168 | 0.162809 | 15 |
| 16 | 8.137249 | 50.980352 | 0.019615 | 0.122892 | 6.265060 | 0.159615 | 16 |
| 17 | 9.276464 | 59.117601 | 0.016915 | 0.107800 | 6.372859 | 0.156915 | 17 |
| 18 | 10.575169 | 68.394066 | 0.014621 | 0.094561 | 6.467420 | 0.154621 | 18 |
| 19 | 12.055693 | 78.969235 | 0.012663 | 0.082948 | 6.550369 | 0.152663 | 19 |
| 20 | 13.743490 | 91.024928 | 0.010986 | 0.072762 | 6.623131 | 0.150986 | 20 |
| 21 | 15.667578 | 104.768418 | 0.009545 | 0.063826 | 6.686957 | 0.149545 | 21 |
| 22 | 17.861039 | 120.435996 | 0.008303 | 0.055988 | 6.742944 | 0.148303 | 22 |
| 23 | 20.361585 | 138.297035 | 0.007231 | 0.049112 | 6.792056 | 0.147231 | 23 |
| 24 | 23.212207 | 158.658620 | 0.006303 | 0.043081 | 6.835137 | 0.146303 | 24 |
| 25 | 26.461916 | 181.870827 | 0.005498 | 0.037790 | 6.872927 | 0.145498 | 25 |
| 26 | 30.166584 | 208.332743 | 0.004800 | 0.033149 | 6.906077 | 0.144800 | 26 |
| 27 | 34.389906 | 238.499327 | 0.004193 | 0.029078 | 6.935155 | 0.144193 | 27 |
| 28 | 39.204493 | 272.889233 | 0.003664 | 0.025507 | 6.960662 | 0.143664 | 28 |
| 29 | 44.693122 | 312.093725 | 0.003204 | 0.022375 | 6.983037 | 0.143204 | 29 |
| 30 | 50.950159 | 356.786847 | 0.002803 | 0.019627 | 7.002664 | 0.142803 | 30 |
| 31 | 58.083181 | 407.737006 | 0.002453 | 0.017217 | 7.019881 | 0.142453 | 31 |
| 32 | 66.214826 | 465.820186 | 0.002147 | 0.015102 | 7.034983 | 0.142147 | 32 |
| 33 | 75.484902 | 532.035012 | 0.001880 | 0.013248 | 7.048231 | 0.141880 | 33 |
| 34 | 86.052788 | 607.519914 | 0.001646 | 0.011621 | 7.059852 | 0.141646 | 34 |
| 35 | 98.100178 | 693.572702 | 0.001442 | 0.010194 | 7.070045 | 0.141442 | 35 |
| 36 | 111.834203 | 791.672881 | 0.001263 | 0.008942 | 7.078987 | 0.141263 | 36 |
| 37 | 127.490992 | 903.507084 | 0.001107 | 0.007844 | 7.086831 | 0.141107 | 37 |
| 38 | 145.339731 | 1030.998076 | 0.000970 | 0.006880 | 7.093711 | 0.140970 | 38 |
| 39 | 165.687293 | 1176.337806 | 0.000850 | 0.006035 | 7.099747 | 0.140850 | 39 |
| 40 | 188.883514 | 1342.025099 | 0.000745 | 0.005294 | 7.105041 | 0.140745 | 40 |
| 41 | 215.327206 | 1530.908613 | 0.000653 | 0.004644 | 7.109685 | 0.140653 | 41 |
| 42 | 245.473015 | 1746.235819 | 0.000573 | 0.004074 | 7.113759 | 0.140573 | 42 |
| 43 | 279.839237 | 1991.708833 | 0.000502 | 0.003573 | 7.117332 | 0.140502 | 43 |
| 44 | 319.016730 | 2271.548070 | 0.000440 | 0.003135 | 7.120467 | 0.140440 | 44 |
| 45 | 363.679072 | 2590.564800 | 0.000386 | 0.002750 | 7.123217 | 0.140386 | 45 |
| 46 | 414.594142 | 2954.243872 | 0.000338 | 0.002412 | 7.125629 | 0.140338 | 46 |
| 47 | 472.637322 | 3368.838014 | 0.000297 | 0.002116 | 7.127744 | 0.140297 | 47 |
| 48 | 538.806547 | 3841.475336 | 0.000260 | 0.001856 | 7.129600 | 0.140260 | 48 |
| 49 | 614.239464 | 4380.281883 | 0.000228 | 0.001628 | 7.131228 | 0.140228 | 49 |
| 50 | 700.232988 | 4994.521346 | 0.000200 | 0.001428 | 7.132656 | 0.140200 | 50 |

ANNUAL COMPOUND INTEREST TABLES
15.00\% ANNUAL INTEREST RATE


## ANNUAL COMPOUND INTEREST TABLES

16.00\% ANNUAL INTEREST RATE

|  | 1 <br> AMOUNT OF $\$ 1$ AT COMPOUND INTEREST | ```2 ACCUMULATION OF $1 PER PERIOO``` | $\begin{aligned} & 3 \\ & \text { SINKING } \\ & \text { FUND } \\ & \text { FACTOR } \end{aligned}$ | 4 <br> PRESENT VALUE REVERSIOW OF \$1 | 5 <br> PRESENT VALUE ORD. ANNUITY <br> \$1 PER PERIOO | $\begin{gathered} 6 \\ \text { INSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE } \$ 1 \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| YEARS |  |  |  |  |  |  | YEARS |
| 1 | 1.160000 | 1.000000 | 1.000000 | 0.862069 | 0.862069 | 1.160000 | 1 |
| 2 | 1.345600 | 2.160000 | 0.462963 | 0.743163 | 1.605232 | 0.622963 | 2 |
| 3 | 1.560896 | 3.505600 | 0.285258 | 0.640658 | 2.245890 | 0.445258 | 3 |
| 4 | 1.810639 | 5.066496 | 0.197375 | 0.552291 | 2.798181 | 0.357375 | 4 |
| 5 | 2.100342 | 6.877135 | 0.145409 | 0.476113 | 3.274294 | 0.305409 | 5 |
| 6 | 2.436396 | 8.977477 | 0.111390 | 0.410442 | 3.684736 | 0.271390 | 6 |
| 7 | 2.826220 | 11.413873 | 0.087613 | 0.353830 | 4.038565 | 0.247613 | 7 |
| 8 | 3.278415 | 14.240093 | 0.070224 | 0.305025 | 4.343591 | 0.230224 | 8 |
| 9 | 3.802961 | 17.518508 | 0.057082 | 0.262953 | 4.606544 | 0.217082 | 9 |
| 10 | 4.411435 | 21.321469 | 0.046901 | 0.226684 | 4.833227 | 0.206901 | 10 |
| 11 | 5.117265 | 25.732904 | 0.038861 | 0.195417 | 5.028644 | 0.198861 | 11 |
| 12 | 5.936027 | 30.850169 | 0.032415 | 0.168463 | 5.197107 | 0.192415 | 12 |
| 13 | 6.885791 | 36.786196 | 0.027184 | 0.145227 | 5.342334 | 0.187184 | 13 |
| 14 | 7.987518 | 43.671987 | 0.022898 | 0.125195 | 5.467529 | 0.182898 | 14 |
| 15 | 9.265521 | 51.659505 | 0.019358 | 0.107927 | 5.575456 | 0.179358 | 15 |
| 16 | 10.748004 | 60.925026 | 0.016414 | 0.093041 | 5.668497 | 0.176414 | 16 |
| 17 | 12.467685 | 71.673030 | 0.013952 | 0.080207 | 5.748704 | 0.173952 | 17 |
| 18 | 14.462514 | 84.140715 | 0.011885 | 0.069144 | 5.817848 | 0.171885 | 18 |
| 19 | 16.776517 | 98.603230 | 0.010142 | 0.059607 | 5.877455 | 0.170142 | 19 |
| 20 | 19.460759 | 115.379747 | 0.008667 | 0.051385 | 5.928841 | 0.168667 | 20 |
| 21 | 22.574481 | 134.840506 | 0.007416 | 0.044298 | 5.973139 | 0.167416 | 21 |
| 22 | 26.186398 | 157.414987 | 0.006353 | 0.038188 | 6.011326 | 0.166353 | 22 |
| 23 | 30.376222 | 183.601385 | 0.005447 | 0.032920 | 6.044247 | 0.165447 | 23 |
| 24 | 35.236417 | 213.977607 | 0.004673 | 0.028380 | 6.072627 | 0.164673 | 24 |
| 25 | 40.874244 | 249.214024 | 0.004013 | 0.024465 | 6.097092 | 0.164013 | 25 |
| 26 | 47.414123 | 290.088267 | 0.003447 | 0.021091 | 6.118183 | 0.163447 | 26 |
| 27 | 55.000382 | 337.502390 | 0.002963 | 0.018182 | 6.136364 | 0.162963 | 27 |
| 28 | 63.800444 | 392.502773 | 0.002548 | 0.015674 | 6.152038 | 0.162548 | 28 |
| 29 | 74.008515 | 456.303216 | 0.002192 | 0.013512 | 6.165550 | 0.162192 | 29 |
| 30 | 85.849877 | 530.311731 | 0.001886 | 0.011648 | 6.177198 | 0.161886 | 30 |
| 31 | 99.585857 | 616.161608 | 0.001623 | 0.010042 | 6.187240 | 0.161623 | 31 |
| 32 | 115.519594 | 715.747465 | 0.001397 | 0.008657 | 6.195897 | 0.161397 | 32 |
| 33 | 134.002729 | 831.267059 | 0.001203 | 0.007463 | 6.203359 | 0.161203 | 33 |
| 34 | 155.443166 | 965.269789 | 0.001036 | 0.006433 | 6.209792 | 0.161036 | 34 |
| 35 | 180.314073 | 1120.712955 | 0.000892 | 0.005546 | 6.215338 | 0.160892 | 35 |
| 36 | 209.164324 | 1301.027028 | 0.000769 | 0.004781 | 6.220119 | 0.160769 |  |
| 37 | 242.630616 | 1510.191352 | 0.000662 | 0.004121 | 6.224241 | 0.160662 | 37 |
| 38 | 281.451515 | 1752.821968 | 0.000571 | 0.003553 | 6.227794 | 0.160571 | 38 |
| 39 | 326.483757 | 2034.273483 | 0.000492 | 0.003063 | 6.230857 | 0.160492 | 39 |
| 40 | 378.721158 | 2360.757241 | 0.000424 | 0.002640 | 6.233497 | 0.160424 | 40 |
| 41 | 439.316544 | 2739.478399 | 0.000365 | 0.002276 | 6.235773 | 0.160365 | 41 |
| 42 | 509.607191 | 3178.794943 | 0.000315 | 0.001962 | 6.237736 | 0.160315 | 42 |
| 43 | 591.144341 | 3688.402134 | 0.000271 | 0.001692 | 6.239427 | 0.160271 | 43 |
| 44 | 685.727436 | 4279.546475 | 0.000234 | 0.001458 | 6.240886 | 0.160234 | 44 |
| 45 | 795.443826 | 4965.273911 | 0.000201 | 0.001257 | 6.242143 | 0.160201 | 45 |
| 46 | 922.714838 | 5760.717737 | 0.000174 | 0.001084 | 6.243227 | 0.160174 | 46 |
| 47 | 1070.349212 | 6683.432575 | 0.000150 | 0.000934 | 6.244161 | 0.160150 | 47 |
| 48 | 1241.605086 | 7753.781787 | 0.000129 | 0.000805 | 6.244966 | 0.160129 | 48 |
| 49 | 1440.261900 | 8995.386873 | 0.000111 | 0.000694 | 6.245661 | 0.160111 | 49 |
| 50 | 1670.703804 | 10435.648773 | 0.000096 | 0.000599 | 6.246259 | 0.160096 | 50 |

ANNUAL COMPOUND INTEREST TABLES
17.00\% ANNUAL INTEREST RATE

|  | $\begin{gathered} 1 \\ \text { AMOUNT OF } \$ 1 \\ \text { AT COMPOUND } \\ \text { INTEREST } \end{gathered}$ | ```ACCUMULATION OF $1 PER PERIOD``` | $\begin{gathered} 3 \\ \text { SINKING } \\ \text { FUND } \\ \text { FACTOR } \end{gathered}$ | ```4 present value REVERSION OF $1``` | 5 <br> present value ORD. ANNUITY \$1 PER PERIOD | $\begin{gathered} 6 \\ \text { INSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE } \$ 1 \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| years |  |  |  |  |  |  | YEARS |
| 1 | 1.170000 | 1.000000 | 1.000000 | 0.854701 | 0.854701 | 1.170000 | 1 |
| 2 | 1.368900 | 2.170000 | 0.460829 | 0.730514 | 1.585214 | 0.630829 | 2 |
| 3 | 1.601613 | 3.538900 | 0.282574 | 0.624371 | 2.209585 | 0.452574 | 3 |
| 4 | 1.873887 | 5.140513 | 0.194533 | 0.533650 | 2.743235 | 0.364533 | 4 |
| 5 | 2.192448 | 7.014400 | 0.142564 | 0.456111 | 3.199346 | 0.312564 | 5 |
| 6 | 2.565164 | 9.206848 | 0.108615 | 0.389839 | 3.589185 | 0.278615 | 6 |
| - 7 | 3.001242 | 11.772012 | 0.084947 | 0.333195 | 3.922380 | 0.254947 | 7 |
| 8 | 3.511453 | 14.773255 | 0.067690 | 0.284782 | 4.207163 | 0.237690 | 8 |
| 9 | 4.108400 | 18.284708 | 0.054691 | 0.243404 | 4.450566 | 0.224691 | 9 |
| 10 | 4.806828 | 22.393108 | 0.044657 | 0.208037 | 4.658604 | 0.214657 | 10 |
| 11 | 5.623989 | 27.199937 | 0.036765 | 0.177810 | 4.836413 | 0.206765 | 11 |
| 12 | 6.580067 | 32.823926 | 0.030466 | 0.151974 | 4.988387 | 0.200466 | 12 |
| 13 | 7.698679 | 39.403993 | 0.025378 | 0.129892 | 5.118280 | 0.195378 | 13 |
| 14 | 9.007454 | 47.102672 | 0.021230 | 0.111019 | 5.229299 | 0.191230 | 14 |
| 15 | 10.538721 | 56.110126 | 0.017822 | 0.094888 | 5.324187 | 0.187822 | 15 |
| 16 | 12.330304 | 66.648848 | 0.015004 | 0.081101 | 5.405288 | 0.185004 | 16 |
| 17 | 14.426456 | 78.979152 | 0.012662 | 0.069317 | 5.474605 | 0.182662 | 17 |
| 18 | 16.878953 | 93.405608 | 0.010706 | 0.059245 | 5.533851 | 0.180706 | 18 |
| 19 | 19.748375 | 110.284561 | 0.009067 | 0.050637 | 5.584488 | 0.179067 | 19 |
| 20 | 23.105599 | 130.032936 | 0.007690 | 0.043280 | 5.627767 | 0.177690 | 20 |
| 21 | 27.033551 | 153.138535 | 0.006530 | 0.036991 | 5.664758 | 0.176530 | 21 |
| 22 | 31.629255 | 180.172086 | 0.005550 | 0.031616 | 5.696375 | 0.175550 | 22 |
| 23 | 37.006228 | 211.801341 | 0.004721 | 0.027022 | 5.723397 | 0.174721 | 23 |
| 24 | 43.297287 | 248.807569 | 0.004019 | 0.023096 | 5.746493 | 0.174019 | 24 |
| 25 | 50.657826 | 292.104856 | 0.003423 | 0.019740 | 5.766234 | 0.173423 | 25 |
| 26 | 59.269656 | 342.762681 | 0.002917 | 0.016872 | 5.783106 | 0.172917 | 26 |
| 27 | 69.345497 | 402.032337 | 0.002487 | 0.014421 | 5.797526 | 0.172487 | 27 |
| 28 | 81.134232 | 471.377835 | 0.002121 | 0.012325 | 5.809851 | 0.172121 | 28 |
| 29 | 94.927051 | 552.512066 | 0.001810 | 0.010534 | 5.820386 | 0.171810 | 29 |
| 30 | 111.064650 | 647.439118 | 0.001545 | 0.009004 | 5.829390 | 0.171545 | 30 |
| 31 | 129.945641 | 758.503768 | 0.001318 | 0.007696 | 5.837085 | 0.171318 | 31 |
| 32 | 152.036399 | 888.449408 | 0.001126 | 0.006577 | 5.843663 | 0.171126 | 32 |
| 33 | 177.882587 | 1040.485808 | 0.000961 | 0.005622 | 5.849284 | 0.170961 | 33 |
| 34 | 208.122627 | 1218.368395 | 0.000821 | 0.004805 | 5.854089 | 0.170821 | 34 |
| 35 | 243.503474 | 1426.491022 | 0.000701 | 0.004107 | 5.858196 | 0.170701 | 35 |
| 36 | 284.899064 | 1669.994496 | 0.000599 | 0.003510 | 5.861706 | 0.170599 | 36 |
| 37 | 333.331905 | 1954.893560 | 0.000512 | 0.003000 | 5.864706 | 0.170512 | 37 |
| 38 | 389.998329 | 2288.225465 | 0.000437 | 0.002564 | 5.867270 | 0.170437 | 38 |
| 39 | 456.298045 | 2678.223794 | 0.000373 | 0.002192 | 5.869461 | 0.170373 | 39 |
| 40 | 533.868713 | 3134.521839 | 0.000319 | 0.001873 | 5.871335 | 0.170319 | 40 |
| 41 | 624.626394 | 3668.390552 | 0.000273 | 0.001601 | 5.872936 | 0.170273 | 41 |
| 42 | 730.812881 | 4293.016946 | 0.000233 | 0.001368 | 5.874304 | 0.170233 | 42 |
| 43 | 855.051071 | 5023.829827 | 0.000199 | 0.001170 | 5.875473 | 0.170199 | 43 |
| 44 | 1000.409753 | 5878.880897 | 0.000170 | 0.001000 | 5.876473 | 0.170170 | 44 |
| 45 | 1170.479411 | 6879.290650 | 0.000145 | 0.000854 | 5.877327 | 0.170145 | 45 |
| 46 | 1369.460910 | 8049.770061 | 0.000124 | 0.000730 | 5.878058 | 0.170124 | 46 |
| 47 | 1602.269265 | 9419.230971 | 0.000106 | 0.000624 | 5.878682 | 0.170106 | 47 |
| 48 | 1874.655040 | 11021.500236 | 0.000091 | 0.000533 | 5.879215 | 0.170091 | 48 |
| 49 | 2193.346397 | 12896.155276 | 0.000078 | 0.000456 | 5.879671 | 0.170078 | 49 |
| 50 | 2566.215284 | 15089.501673 | 0.000066 | 0.000390 | 5.880061 | 0.170066 | 50 |

## ANNUAL COMPOUND INTEREST TABLES

18.00\% ANNUAL INTEREST RATE

|  | 1 <br> AMOUNT OF $\$ 1$ AT COMPOUND INTEREST | ```acCumulation OF $1 PER PERIOD``` | $\begin{gathered} 3 \\ \text { SINKING } \\ \text { FUND } \\ \text { FACTOR } \end{gathered}$ | 4 PRESENT VALUE REVERSIOW of $\$ 1$ | 5 <br> PRESENT VALUE ORD. ANNUITY \$1 PER PERICO | $\begin{gathered} 6 \\ \text { INSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE } \$ 1 \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| YEARS |  |  |  |  |  |  | YEARS |
| 1 | 1.180000 | 1.000000 | 1.000000 | 0.847458 | 0.847458 | 1.180000 | 1 |
| 2 | 1.392400 | 2.180000 | 0.458716 | 0.718184 | 1.565642 | 0.638716 | 2 |
| 3 | 1.643032 | 3.572400 | 0.27992 | 0.608631 | 2.174273 | 0.459924 | 3 |
| 4 | 1.938778 | 5.215432 | 0.191739 | 0.515789 | 2.690062 | 0.371739 | 4 |
| 5 | 2.287758 | 7.154210 | 0.139778 | 0.437109 | 3.127171 | 0.319778 | 5 |
| 6 | 2.699554 | 9.441968 | 0.105910 | 0.370432 | 3.497603 | 0.285910 | 6 |
| 7 | 3.185474 | 12.141522 | 0.082362 | 0.313925 | 3.811528 | 0.262362 | 7 |
| 8 | 3.758859 | 15.326996 | 0.065244 | 0.266038 | 4.077566 | 0.245244 | 8 |
| 9 | 4.435454 | 19.085855 | 0.052395 | 0.225456 | 4.303022 | 0.232395 | 9 |
| 10 | 5.233836 | 23.521309 | 0.042515 | 0.191064 | 4.494086 | 0.222515 | 10 |
| 11 | 6.175926 | 28.755144 | 0.034776 | 0.161919 | 4.656005 | 0.214776 | 11 |
| 12 | 7.287593 | 34.931070 | 0.028628 | 0.137220 | 4.793225 | 0.208628 | 12 |
| 13 | 8.599359 | 42.218663 | 0.023686 | 0.116288 | 4.909513 | 0.203686 | 13 |
| 14 | 10.147244 | 50.818022 | 0.019678 | 0.098549 | 5.008062 | 0.199678 | 14 |
| 15 | 11.973748 | 60.965266 | 0.016403 | 0.083516 | 5.091578 | 0.196403 | 15 |
| 16 | 14.129023 | 72.939014 | 0.013710 | 0.070776 | 5.162354 | 0.193710 | 16 |
| 17 | 16.672247 | 87.068036 | 0.011485 | 0.059980 | 5.222334 | 0.191485 | 17 |
| 18 | 19.673251 | 103.740283 | 0.009639 | 0.050830 | 5.273164 | 0.189639 | 18 |
| 19 | 23.214436 | 123.413534 | 0.008103 | 0.043077 | 5.316241 | 0.188103 | 19 |
| 20 | 27.393035 | 146.627970 | 0.006820 | 0.036506 | 5.352746 | 0.186820 | 20 |
| 21 | 32.323781 | 174.021005 | 0.005746 | 0.030937 | 5.383683 | 0.185746 | 21 |
| 22 | 38.142061 | 206.344785 | 0.004846 | 0.026218 | 5.409901 | 0.184846 | 22 |
| 23 | 45.007632 | 244.486847 | 0.004090 | 0.022218 | 5.432120 | 0.184090 | 23 |
| 24 | 53.109006 | 289.494479 | 0.003454 | 0.018829 | 5.450949 | 0.183454 | 24 |
| 25 | 62.668627 | 342.603486 | 0.002919 | 0.015957 | 5.466906 | 0.182919 | 25 |
| 26 | 73.948980 | 405.272113 | 0.002467 | 0.013523 | 5.480429 | 0.182467 | 26 |
| 27 | 87.259797 | 479.221093 | 0.002087 | 0.011460 | 5.491889 | 0.182087 | 27 |
| 28 | 102.966560 | 566.480890 | 0.001765 | 0.009712 | 5.501601 | 0.181765 | 28 |
| 29 | 121.500541 | 669.447450 | 0.001494 | 0.008230 | 5.509831 | 0.181494 | 29 |
| 30 | 143.370638 | 790.947991 | 0.001264 | 0.006975 | 5.516806 | 0.181264 | 30 |
| 31 | 169.177353 | 934.318630 | 0.001070 | 0.005911 | 5.522717 | 0.181070 | 31 |
| 32 | 199.629277 | 1103.495983 | 0.000906 | 0.005009 | 5.527726 | 0.180906 | 32 |
| 33 | 235.562547 | 1303.125260 | 0.000767 | 0.004245 | 5.531971 | 0.180767 | 33 |
| 34 | 277.963805 | 1538.687807 | 0.000650 | 0.003598 | 5.535569 | 0.180650 | 34 |
| 35 | 327.997290 | 1816.651612 | 0.000550 | 0.003049 | 5.538618 | 0.180550 | 35 |
| 36 | 387.036802 | 2144.648902 | 0.000466 | 0.002584 | 5.541201 | 0.180466 | 36 |
| 37 | 456.703427 | 2531.685705 | 0.000395 | 0.002190 | 5.543391 | 0.180395 | 37 |
| 38 | 538.910044 | 2988.389132 | 0.000335 | 0.001856 | 5.545247 | 0.180335 | 38 |
| 39 | 635.913852 | 3527.299175 | 0.000284 | 0.001573 | 5.546819 | 0.180284 | 39 |
| 40 | 750.378345 | 4163.213027 | 0.000240 | 0.001333 | 5.548152 | 0.180240 | 40 |
| 41 | 885.446447 | 4913.591372 | 0.000204 | 0.001129 | 5.549281 | 0.180204 | 41 |
| 42 | 1044.826807 | 5799.037819 | 0.000172 | 0.000957 | 5.550238 | 0.180172 | 42 |
| 43 | 1232.895633 | 6843.884626 | 0.000146 | 0.000811 | 5.551049 | 0.180146 | 43 |
| 44 | 1454.816847 | 8076.760259 | 0.000124 | 0.000687 | 5.551737 | 0.180124 | 44 |
| 45 | 1716.683879 | 9531.577105 | 0.000105 | 0.000583 | 5.552319 | 0.180105 | 45 |
| 46 | 2025.686977 | 11248.260984 | 0.000089 | 0.000494 | 5.552813 | 0.180089 | 46 |
| 47 | 2390.310633 | 13273.947961 | 0.000075 | 0.000418 | 5.553231 | 0.180075 | 47 |
| 48 | 2820.566547 | 15664.258594 | 0.000064 | 0.000355 | 5.553586 | 0.180064 | 48 |
| 49 | 3328.268525 | 18484.825141 | 0.000054 | 0.000300 | 5.553886 | 0.180054 | 49 |
| 50 | 3927.356860 | 21813.093666 | 0.000046 | 0.000255 | 5.554141 | 0.180046 | 50 |

annual compound interest tables
19.00\% ANNUAL INTEREST RATE

|  | 1 <br> AMOUNT OF $\$ 1$ AT COMPOUND INTEREST |  | $\begin{aligned} & 3 \\ & \text { SINKING } \\ & \text { FUND } \\ & \text { FACTOR } \end{aligned}$ | 4 PRESENT VALUE REVERSION OF $\$ 1$ | 5 <br> PRESENT VALUE ORD. ANNUITY \$1 PER PERICO | $\begin{gathered} 6 \\ \text { INSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE \$1 } \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| YEARS |  |  |  |  |  |  | YEARS |
| 1 | 1.190000 | 1.000000 | 1.000000 | 0.840336 | 0.840336 | 1.190000 | 1 |
| 2 | 1.416100 | 2.190000 | 0.456621 | 0.706165 | 1.546501 | 0.646621 | 2 |
| 3 | 1.685159 | 3.606100 | 0.277308 | 0.593416 | 2.139917 | 0.467308 | 3 |
| 4 | 2.005339 | 5.291259 | 0.188991 | 0.498669 | 2.638586 | 0.378991 | 4 |
| 5 | 2.386354 | 7.296598 | 0.137050 | 0.419049 | 3.057635 | 0.327050 | 5 |
| 6 | 2.839761 | 9.682952 | 0.103274 | 0.352142 | 3.409777 | 0.293274 | 6 |
| 7 | 3.379315 | 12.522713 | 0.079855 | 0.295918 | 3.705695 | 0.269855 | 7 |
| 8 | 4.021385 | 15.902028 | 0.062885 | 0.248671 | 3.954366 | 0.252885 | 8 |
| 9 | 4.785449 | 19.923413 | 0.050192 | 0.208967 | 4.163332 | 0.240192 | 9 |
| 10 | 5.694684 | 24.708862 | 0.040471 | 0.175602 | 4.338935 | 0.230471 | 10 |
| 11 | 6.776674 | 30.403546 | 0.032891 | 0.147565 | 4.486500 | 0.222891 | 11 |
| 12 | 8.064242 | 37.180220 | 0.026896 | 0.124004 | 4.610504 | 0.216896 | 12 |
| 13 | 9.596448 | 45.244461 | 0.022102 | 0.104205 | 4.714709 | 0.212102 | 13 |
| 14 | 11.419773 | 54.840909 | 0.018235 | 0.087567 | 4.802277 | 0.208235 | 14 |
| 15 | 13.589530 | 66.260682 | 0.015092 | 0.073586 | 4.875863 | 0.205092 | 15 |
| 16 | 16.171540 | 79.850211 | 0.012523 | 0.061837 | 4.937700 | 0.202523 | 16 |
| 17 | 19.244133 | 96.021731 | 0.010414 | 0.051964 | 4.989664 | 0.200414 | 17 |
| 18 | 22.900518 | 115.265884 | 0.008676 | 0.043667 | 5.033331 | 0.198676 | 18 |
| 19 | 27.251616 | 138.166402 | 0.007238 | 0.036695 | 5.070026 | 0.197238 | 19 |
| 20 | 32.429423 | 165.418018 | 0.006045 | 0.030836 | 5.100862 | 0.196045 | 20 |
| 21 | 38.591014 | 197.847442 | 0.005054 | 0.025913 | 5.126775 | 0.195054 | 21 |
| 22 | 45.923307 | 236.438456 | 0.004229 | 0.021775 | 5.148550 | 0.194229 | 22 |
| 23 | 54.648735 | 282.361762 | 0.003542 | 0.018299 | 5.166849 | 0.193542 | 23 |
| 24 | 65.031994 | 337.010497 | 0.002967 | 0.015377 | 5.182226 | 0.192967 | 24 |
| 25 | 77.388073 | 402.042491 | 0.002487 | 0.012922 | 5.195148 | 0.192487 | 25 |
| 26 | 92.091807 | 479.430565 | 0.002086 | 0.010859 | 5.206007 | 0.192086 | 26 |
| 27 | 109.589251 | 571.522372 | 0.001750 | 0.009125 | 5.215132 | 0.191750 | 27 |
| 28 | 130.411208 | 681.111623 | 0.001468 | 0.007668 | 5.222800 | 0.191468 | 28 |
| 29 | 155.189338 | 811.522831 | 0.001232 | 0.006444 | 5.229243 | 0.191232 | 29 |
| 30 | 184.675312 | 966.712169 | 0.001034 | 0.005415 | 5.234658 | 0.191034 | 30 |
| 31 | 219.763621 | 1151.387481 | 0.000869 | 0.004550 | 5.239209 | 0.190869 | 31 |
| 32 | 261.518710 | 1371.151103 | 0.000729 | 0.003824 | 5.243033 | 0.190729 | 32 |
| 33 | 311.207264 | 1632.669812 | 0.000612 | 0.003213 | 5.246246 | 0.190612 | 33 |
| 34 | 370.336645 | 1943.877077 | 0.000514 | 0.002700 | 5.248946 | 0.190514 | 34 |
| 35 | 440.700607 | 2314.213721 | 0.000432 | 0.002269 | 5.251215 | 0.190432 | 35 |
|  | 524.433722 | 2754.914328 | 0.000363 | 0.001907 | 5.253122 | 0.190363 |  |
| 37 | 624.076130 | 3279.348051 | 0.000305 | 0.001602 | 5.254724 | 0.190305 | 37 |
| 38 | 742.650594 | 3903.424180 | 0.000256 | 0.001347 | 5.256071 | 0.190256 | 38 |
| 39 | 883.754207 | 4646.074775 | 0.000215 | 0.001132 | 5.257202 | 0.190215 | 39 |
| 40 | 1051.667507 | 5529.828982 | 0.000181 | 0.000951 | 5.258153 | 0.190181 | 40 |
| 41 | 1251.484333 | 6581.496488 | 0.000152 | 0.000799 | 5.258952 | 0.190152 | 41 |
| 42 | 1489.266356 | 7832.980821 | 0.000128 | 0.000671 | 5.259624 | 0.190128 | 42 |
| 43 | 1772.226964 | 9322.247177 | 0.000107 | 0.000564 | 5.260188 | 0.190107 | 43 |
| 44 | 2108.950087 | 11094.474141 | 0.000090 | 0.000474 | 5.260662 | 0.190090 | 44 |
| 45 | 2509.650603 | 13203.424228 | 0.000076 | 0.000398 | 5.261061 | 0.190076 | 45 |
| 46 | 2986.484218 | 15713.074831 | 0.000064 | 0.000335 | 5.261396 | 0.190064 | 46 |
| 47 | 3553.916219 | 18699.559049 | 0.000053 | 0.000281 | 5.261677 | 0.190053 | 47 |
| 48 | 4229.160301 | 22253.475268 | 0.000045 | 0.000236 | 5.261913 | 0.190045 | 48 |
| 49 | 5032.700758 | 26482.635569 | 0.000038 | 0.000199 | 5.262112 | 0.190038 | 49 |
| 50 | 5988.913902 | 31515.336327 | 0.000032 | 0.000167 | 5.262279 | 0.190032 | 50 |

## ANNUAL COMPOUND INTEREST TABLES

20.00\% ANNUAL INTEREST RATE

|  | 1 <br> AMOUNT OF $\$ 1$ AT COMPOUND INTEREST |  | $\begin{gathered} 3 \\ \text { SINKING } \\ \text { FUND } \\ \text { FACTOR } \end{gathered}$ | 4 <br> present value REVERSIOW OF $\$ 1$ | 5 <br> present value ORD. ANNUITY \$1 PER PERICO | $\begin{gathered} 6 \\ \text { INSTALLMENT } \\ \text { TO } \\ \text { AMORTIZE } \$ 1 \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| YEARS |  |  |  |  |  |  | YEARS |
| 1 | 1.200000 | 1.000000 | 1.000000 | 0.833333 | 0.833333 | 1.200000 | 1 |
| 2 | 1.440000 | 2.200000 | 0.454545 | 0.694444 | 1.527778 | 0.654545 | 2 |
| 3 | 1.728000 | 3.640000 | 0.274725 | 0.578704 | 2.106481 | 0.474725 | 3 |
| 4 | 2.073600 | 5.368000 | 0.186289 | 0.482253 | 2.588735 | 0.386289 | 4 |
| 5 | 2.488320 | 7.441600 | 0.134380 | 0.401878 | 2.990612 | 0.334380 | 5 |
| 6 | 2.985984 | 9.929920 | 0.100706 | 0.334898 | 3.325510 | 0.300706 | 6 |
| 7 | 3.583181 | 12.915904 | 0.077424 | 0.279082 | 3.604592 | 0.277424 | 7 |
| 8 | 4.299817 | 16.499085 | 0.060609 | 0.232568 | 3.837160 | 0.260609 | 8 |
| 9 | 5.159780 | 20.798902 | 0.048079 | 0.193807 | 4.030967 | 0.248079 | 9 |
| 10 | 6.191736 | 25.958682 | 0.038523 | 0.161506 | 4.192472 | 0.238523 | 10 |
| 11 | 7.430084 | 32.150419 | 0.031104 | 0.134588 | 4.327060 | 0.231104 | 11 |
| 12 | 8.916100 | 39.580502 | 0.025265 | 0.112157 | 4.439217 | 0.225265 | 12 |
| 13 | 10.699321 | 48.496603 | 0.020620 | 0.093464 | 4.532681 | 0.220620 | 13 |
| 14 | 12.839185 | 59.195923 | 0.016893 | 0.077887 | 4.610567 | 0.216893 | 14 |
| 15 | 15.407022 | 72.035108 | 0.013882 | 0.064905 | 4.675473 | 0.213882 | 15 |
| 16 | 18.488426 | 87.442129 | 0.011436 | 0.054088 | 4.729561 | 0.211436 | 16 |
| 17 | 22.186111 | 105.930555 | 0.009440 | 0.045073 | 4.774634 | 0.209440 | 17 |
| 18 | 26.623333 | 128.116666 | 0.007805 | 0.037561 | 4.812195 | 0.207805 | 18 |
| 19 | 31.948000 | 154.740000 | 0.006462 | 0.031301 | 4.843496 | 0.206462 | 19 |
| 20 | 38.337600 | 186.688000 | 0.005357 | 0.026084 | 4.869580 | 0.205357 | 20 |
| 21 | 46.005120 | 225.025600 | 0.004444 | 0.021737 | 4.891316 | 0.204444 | 21 |
| 22 | 55.206144 | 271.030719 | 0.003690 | 0.018114 | 4.909430 | 0.203690 | 22 |
| 23 | 66.247373 | 326.236863 | 0.003065 | 0.015095 | 4.924525 | 0.203065 | 23 |
| 24 | 79.496847 | 392.484236 | 0.002548 | 0.012579 | 4.937104 | 0.202548 | 24 |
| 25 | 95.396217 | 471.981083 | 0.002119 | 0.010483 | 4.947587 | 0.202119 | 25 |
| 26 | 114.475460 | 567.377300 | 0.001762 | 0.008735 | 4.956323 | 0.201762 | 26 |
| 27 | 137.370552 | 681.852760 | 0.001467 | 0.007280 | 4.963602 | 0.201467 | 27 |
| 28 | 164.844662 | 819.223312 | 0.001221 | 0.006066 | 4.969668 | 0.201221 | 28 |
| 29 | 197.813595 | 984.067974 | 0.001016 | 0.005055 | 4.974724 | 0.201016 | 29 |
| 30 | 237.376314 | 1181.881569 | 0.000846 | 0.004213 | 4.978936 | 0.200846 | 30 |
| 31 | 284.851577 | 1419.257883 | 0.000705 | 0.003511 | 4.982447 | 0.200705 | 31 |
| 32 | 341.821892 | 1704.109459 | 0.000587 | 0.002926 | 4.985372 | 0.200587 | 32 |
| 33 | 410.186270 | 2045.931351 | 0.000489 | 0.002438 | 4.987810 | 0.200489 | 33 |
| 34 | 492.223524 | 2456.117621 | 0.000407 | 0.002032 | 4.989842 | 0.200407 | 34 |
| 35 | 590.668229 | 2948.341146 | 0.000339 | 0.001693 | 4.991535 | 0.200339 | 35 |
| 36 | 708.801875 | 3539.009375 | 0.000283 | 0.001411 | 4.992946 | 0.200283 | 36 |
| 37 | 850.562250 | 4247.811250 | 0.000235 | 0.001176 | 4.994122 | 0.200235 | 37 |
| 38 | 1020.674700 | 5098.373500 | 0.000196 | 0.000980 | 4.995101 | 0.200196 | 38 |
| 39 | 1224.809640 | 6119.048200 | 0.000163 | 0.000816 | 4.995918 | 0.200163 | 39 |
| 40 | 1469.771568 | 7343.857840 | 0.000136 | 0.000680 | 4.996598 | 0.200136 | 40 |
| 41 | 1763.725882 | 8813.629408 | 0.000113 | 0.000567 | 4.997165 | 0.200113 | 41 |
| 42 | 2116.471058 | 10577.355289 | 0.000095 | 0.000472 | 4.997638 | 0.200095 | 42 |
| 43 | 2539.765269 | 12693.826347 | 0.000079 | 0.000394 | 4.998031 | 0.200079 | 43 |
| 44 | 3047.718323 | 15233.591617 | 0.000066 | 0.000328 | 4.998359 | 0.200066 | 44 |
| 45 | 3657.261988 | 18281.309940 | 0.000055 | 0.000273 | 4.998633 | 0.200055 | 45 |
| 46 | 4388.714386 | 21938.571928 | 0.000046 | 0.000228 | 4.998861 | 0.200046 | 46 |
| 47 | 5266.457263 | 26327.286314 | 0.000038 | 0.000190 | 4.999051 | 0.200038 | 47 |
| 48 | 6319.748715 | 31593.743576 | 0.000032 | 0.000158 | 4.999209 | 0.200032 | 48 |
| 49 | 7583.698458 | 37913.492292 | 0.000026 | 0.000132 | 4.999341 | 0.200026 | 49 |
| 50 | 9100.438150 | 45497.190750 | 0.000022 | 0.000110 | 4.999451 | 0.200022 | 50 |

## Attached Formula collection.

## Number of periods:



## Future Value for Multiple Cash:

a. Ordinary
$-F V=P M T(1+i)^{n-1}+P M T(1+i)^{n-2}+P M T$

- Annuity

$$
A F V=C \frac{(1+i)^{n}-1}{i}
$$

b. Due:
$A_{\text {dUE }} F V=P M T(1+i)^{n}+P M T(1+i)^{n-1}+P M T(1+i)^{n-2}+\ldots \ldots+P M T(1+i)$

- Annuity

Adue $F V=C\left[\frac{(1+i)^{n}-1}{i}\right] x(1+i)$

## Present Value for Multiple Cash:

a. Ordinary

$$
P V=\frac{C F_{1}}{(1+i)}+\frac{C F_{2}}{(1+i)^{2}}+\frac{C F_{3}}{(1+i)^{3}}+\frac{C F_{4}}{(1+i)^{4}}
$$

- Annuity

$$
A P V=C *\left[\frac{1-\left(\frac{1}{(1+i)^{n}}\right)}{i}\right]
$$

b. Due:

ADUEPV $=C\left[\frac{1-\left(\frac{1}{(1+i)^{n}}\right)}{i}\right] x(1+i)$

## Net present Value

$N P V=-$ Costs..of .the..project $+\frac{C F 1}{(1+i)}+\frac{C F 2}{(1+i)^{2}}+\frac{C F 3}{(1+i)^{3}}$.

## Duration

$D U R=\sum_{t=1}^{n} t \frac{C P_{t}}{(1+i)^{t}} / \sum_{t=1}^{n} \frac{C P_{t}}{(1+i)^{t}}$
$\% \Delta P \approx-D U R \times \frac{\Delta i}{1+i}$

## Probability distribution

$$
\begin{aligned}
& \left.E(R)=p_{1} \cdot E\left(R_{1}\right)\right]+p_{2} E\left(R_{2}\right) \\
& \sigma^{2}=p_{1}\left[R_{1}-E(R)\right]^{2}+p_{2}\left[R_{2}-E(R)\right]^{2}+p_{3}\left(R_{3}-E(R)\right)^{2} \ldots . \quad \sigma=\sqrt{\sigma^{2}}
\end{aligned}
$$

## Historical Data

$E(R)=\frac{R_{1}+R_{2}+R_{3}+R_{T}}{T}$
$\sigma^{2}=\frac{1}{T-1}\left(R_{1}-E(R)\right)^{2}+\ldots .\left(R_{T}-E(R)\right)^{2} \quad \sigma=\sqrt{\sigma^{2}}$

## Portfolio for 2 stocks (A \& B) and 2 states of the economy (boom \& recession)

$$
\begin{array}{ll}
\mathrm{E}(\mathrm{R})_{\mathrm{P}}=\mathrm{w}_{\mathrm{A}}\left(\mathrm{E}(\mathrm{R})_{\mathrm{A}}+\mathrm{w}_{\mathrm{B}}\left(\mathrm{E}(\mathrm{R})_{\mathrm{B}}\right.\right. & \\
\mathrm{R}_{\mathrm{P} 1}=\mathrm{w}_{\mathrm{A}} \mathrm{R}_{\mathrm{A}}+\mathrm{w}_{\mathrm{B}} \mathrm{R}_{\mathrm{B}}+ & \text { Boom } \\
\mathrm{R}_{\mathrm{P} 2}=\mathrm{w}_{\mathrm{A}} \mathrm{R}_{\mathrm{A}}+\mathrm{w}_{\mathrm{B}} \mathrm{R}_{\mathrm{B}}+\ldots & \text { Recession } \\
\sigma^{2}=\operatorname{Pr} ._{1}\left(R_{P_{1}}-E\left(R_{P}\right)\right)^{2}+\operatorname{Pr}_{._{2}}\left(R_{P_{2}}-E\left(R_{P}\right)\right)^{2}
\end{array}
$$

## Bonds valuation

Bond Value $(P V)=C\left[\frac{1-\frac{1}{(1+i)^{n}}}{i}\right]+\frac{F}{(1+i)^{n}}$

$$
Y T M=\frac{C+\frac{F-P}{n}}{\frac{F+P}{2}}
$$

## Stocks valuation

$$
\begin{aligned}
& P_{0}=\frac{D_{1}}{(1+k)}+\frac{D_{2}}{(1+k)^{2}}+\frac{D_{3}}{(1+k)^{3}}+\frac{D_{4}}{(1+k)^{4}} \cdots \cdots . \\
& P_{0}=\frac{D}{K} \\
& \mathrm{P}_{0}=\frac{\mathrm{D}_{1}}{\mathrm{k}-\mathrm{g}}=\frac{\mathrm{D}_{0}(1+\mathrm{g})}{\mathrm{k}-\mathrm{g}} \\
& P_{t}=\frac{D_{t+1}}{k-g}=\frac{D_{t}(1+g)}{k-g}
\end{aligned}
$$

## Covered Interest Parity (CIP)

$$
(1+i)=\frac{F\left(1+i^{*}\right)}{E}
$$

