



**UNIVERSITI KUALA LUMPUR  
BUSINESS SCHOOL**

**FINAL EXAMINATION  
MARCH 2025 SEMESTER**

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|-----------------------|-----------------------------------------------------|
| <b>COURSE CODE</b>    | <b>: EIB10603</b>                                   |
| <b>COURSE NAME</b>    | <b>: FINANCE 1</b>                                  |
| <b>PROGRAMME NAME</b> | <b>: BACHELOR OF BUSINESS ADMINISTRATION (HONS)</b> |
| <b>DATE</b>           | <b>: 21 JUNE 2025</b>                               |
| <b>TIME</b>           | <b>: 2.00 PM – 5.00 PM</b>                          |
| <b>DURATION</b>       | <b>: 3 HOURS</b>                                    |

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**INSTRUCTIONS TO CANDIDATES**

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1. Please **CAREFULLY** read the instructions given in the question paper.
2. This question paper has information printed on both sides of the paper.
3. This question paper consists of **FIVE (5) Questions**.
4. Answer **FOUR (4) Questions ONLY**.
5. Please write your answers on the OMR answer sheet and answer booklet provided.
6. All questions must be answered in **English** (any other language is not allowed).
7. **This question paper must not be removed from the examination hall.**
8. **Compound interest table and formula have been appended for your references.**

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**THERE ARE TWELVE (12) PAGES OF QUESTIONS, INCLUDING THIS PAGE.**

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**INSTRUCTION: Answer FOUR (4) questions.**

**Please use the answer booklet provided.**

**Question 1**

Janjee Score has projected its sales for the first eight months of 2024 as follows:

| MONTH    | TOTAL SALES (RM) |
|----------|------------------|
| JANUARY  | 3,750,000        |
| FEBRUARY | 3,900,000        |
| MARCH    | 3,975,000        |
| APRIL    | 5,445,000        |
| MAY      | 5,775,000        |
| JUNE     | 5,670,000        |
| JULY     | 5,850,000        |
| AUGUST   | 6,200,000        |

The company generates 20% of its sales in cash, while 30% is collected in the following month, and the remaining 50% is collected in the second month following the sales.

The purchases made by the company as follows:

| MONTH    | TOTAL PURCHASES (RM) |
|----------|----------------------|
| JANUARY  | 2,340,000            |
| FEBRUARY | 2,385,000            |
| MARCH    | 3,267,000            |
| APRIL    | 3,465,000            |
| MAY      | 3,402,000            |
| JUNE     | 3,510,000            |
| JULY     | 3,720,000            |
| AUGUST   | 3,950,000            |

The payment for these purchases is made equally in the two months following the purchase.

Additional information:

- i. The company incurs a monthly expense of RM52,500 for wages and RM30,000 for selling expenses.
- ii. The company makes tax repayments of RM45,000 at the beginning of each quarter and spends RM60,000 per month on administrative expenses.
- iii. The company pays interest on its term loan of RM22,500 at the beginning of every quarter.
- iv. In May 2024, the company will purchase a machine costing RM35,000 in cash and will have a monthly depreciation of RM350.
- v. The company has an ending balance of RM120,000 in March and must maintain a minimum balance of RM100,000 at all times.

Prepare a cash budget for Janjee Score the second quarter of 2024.

(25 marks)

## Question 2

- a) Malik and Ridzuan are saving for a future use and decide to put RM50 away in their local bank every year for the next twenty-five years. The local Bank RST will pay them 7% on their account.
  - i. If Malik and Ridzuan put the money in the account faithfully at the end of every year, how much will they have in it at the end of twenty-five years?  
(2 marks)
  - ii. Unfortunately, Malik had an accident in which he sustained head injuries after only 10 years of savings. The medical bill has come to RM1000. Is there enough in the rainy-day fund to cover it?  
(4 marks)
- b) Tyson is offering two repayment plans to Phillip for a long overdue loan. Offer 1 is a visit from an enforcer and the debt due in full at once. Offer 2 is to pay back RM3,900 per year at 20% interest rate until Tyson pays off the loan principal. Phillip owes Tyson RM15,000. How long will it take for Phillip to pay off the loan if he takes Offer 2?  
(4 marks)

- c) Bank ABC offers to pay you a lump sum of RM20,000 after 5 years if you deposit RM9,500 with them today. Bank XYZ, on the other hand, says that they will pay you a lump sum of RM22,000 after 5 years if you deposit RM10,700 with them today. Which offer should you accept, and why?

(5 marks)

- d) Alya Zehra borrowed RM50,000 at a 5% annual rate of interest to be repaid over 3 years. The loan is amortized into 3 equal, annually, and the repayment made at the end of the year.

- i. Calculate the annual payment for this loan.

(2 marks)

- ii. Prepare a loan amortization schedule showing the interest and principal breakdown of each of the three loan payments.

(6 marks)

- iii. Explain why the interest portion of each payment declines with the passage of time.

(2 marks)

### Question 3

Rahman Berhad is a manufacturing firm looking to expand its operations due to increased demand in the Southeast Asian region. After a strategic planning meeting, the board has shortlisted two mutually exclusive investment projects namely, Project Zenith and Project Orion, that aim to automate production lines using smart manufacturing technology. The CFO has asked your investment committee to assess both proposals.

Each project requires the same initial capital outlay and promises even annual cash flows over five years. Due to internal funding limitations, only one project can be undertaken. The firm's cost of capital is 13%. You are required to assess both projects using the following information:

| Details                  | Project Zenith | Project Orion |
|--------------------------|----------------|---------------|
| Initial Investment (RM)  | 250,000        | 250,000       |
| Annual Cash Inflows (RM) | 70,000         | 75,000        |
| Project Duration         | 5 years        | 5 years       |

- a) Compute the following capital budgeting indicators for both projects:
- Payback Period (PB)  
(4 marks)
  - Net Present Value (NPV)  
(5 marks)
  - Internal Rate of Return (IRR)  
(5 marks)
  - Profitability Index (PI)  
(2 marks)
- b) Provide justification for each indicator explaining the investment's desirability.  
(4 marks)
- c) Based on your analysis, recommend which project Rahman Berhad should invest in. Justify your answer.  
(2 marks)
- d) Define the term 'Mutually Exclusive Projects' in the context of capital budgeting. Then, briefly explain two reasons why conflicts may arise between NPV and IRR when ranking such projects.  
(3 marks)

**Question 4**

The following information is related to Fa Ham Ke (FHK) Company as of 31st December 2024:

- Issued share capital of FHK comprises with 1,000,000 ordinary shares. FHK is a quoted company, and its current share price is RM250. The dividend paid for the current year was RM40 per share and growth rate of annual dividend payment is 5%.
- FHK has issued preference shares that consists of 500,000 preference shares and annual dividend per share is RM25. The last traded price of a preference share was RM250.
- Irredeemable, non-quoted long-term borrowings of FHK were RM150 million with annual interest rate of 17%. The company pays income tax at the rate of 28% per annum on its profits.

Compute the following:

- a) Cost of ordinary share capital. (4 marks)
- b) Cost of preference share capital. (3 marks)
- c) Cost of debt. (2 marks)
- d) Weighted average cost of capital (WACC) of FHK. (10 marks)
- e) As a finance manager, explain any three (3) importance of cost of capital to the company. (6 marks)

**Question 5**

Aiman is an individual investor in Malaysia who has recently received an inheritance of RM500,000. He is considering investing this amount in the stock market but is uncertain about the risk-return tradeoff. After consulting with a financial advisor, he has identified two potential investment options:

|                    | Stock A<br>(Technology Sector) | Stock B<br>(Consumer Goods Sector) |
|--------------------|--------------------------------|------------------------------------|
| Expected Return    | 12%                            | 8%                                 |
| Standard Deviation | 18%                            | 10%                                |

A and Stock B is 0.3.

You are required to calculate:

- The expected return of the portfolio.  
(5 marks)
- Calculate the risk (standard deviation) of the portfolio.  
(8 marks)
- Explain the difference between systematic and unsystematic risk. Provide examples from Aiman's case.  
(6 marks)
- Using the Capital Asset Pricing Model (CAPM), determine the required return for Stock A if its beta is 1.2, the risk-free rate is 3%, and the market risk premium is 6%.  
(3 marks)
- Discuss whether Aiman should invest entirely in Stock A or Stock B, based on risk-return trade-off principles.  
(3 marks)

**END OF QUESTION PAPER**

FORMULA

- $FV = PV (FVIF_{i,n})$
- $PV = FV (PVIF_{i,n})$
- $FV = CF_A (FVIFA_{i,n})$
- $PV = CF_A (PVIFA_{i,n})$
- $n = \ln [PMT / (PMT - PV \times r)] / \ln (1+r)$
- $i = (FV / PV)^{1/n} - 1$
- $PB = \frac{IO}{\text{Ann CF}}$
- $PBP = [(n-1)] + [(IO - \text{sum of cash flow before } n) / (\text{cash flow of the year } n)]$
- $NPV = CF (PVIFA_{i,n}) - IO$
- $NPV = \sum [CF (PVIF_{i,n})] - IO$
- $PI = \text{PV of future cash flow} / \text{Initial Investment}$
- $d_1 = d_0(1 + g)$
- $k_e = (d_1/p_0) + g$
- $k_p = d/p_0$
- $r_d = k_i(1-t)$
- $WACC = W_e k_e + W_p k_p + W_d k_d$
- $E(R_p) = (w_A \times E(R_A)) + (w_B \times E(R_B))$
- $\sigma_p = \sqrt{(w_A^2 \sigma_A^2) + (w_B^2 \sigma_B^2) + (2w_A w_B \rho_{AB} \sigma_A \sigma_B)}$
- $ER_i = R_f + \beta_i (ER_m - R_f)$



Table A-1 Future Value Interest Factors for One Dollar Compounded at  $k$  Percent for  $n$  Periods:  $FVIF_{k,n} = (1 + k)^n$ 

| Period | 1%     | 2%     | 3%     | 4%     | 5%     | 6%     | 7%     | 8%     | 9%     | 10%     | 11%     | 12%     | 13%     | 14%     | 15%     | 16%     | 20%     | 24%     | 25%     | 30%     |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1      | 1.0100 | 1.0200 | 1.0300 | 1.0400 | 1.0500 | 1.0600 | 1.0700 | 1.0800 | 1.0900 | 1.1000  | 1.1100  | 1.1200  | 1.1300  | 1.1400  | 1.1500  | 1.1600  | 1.2000  | 1.2400  | 1.2500  | 1.3000  |
| 2      | 1.0201 | 1.0404 | 1.0609 | 1.0816 | 1.1025 | 1.1236 | 1.1449 | 1.1664 | 1.1881 | 1.2100  | 1.2321  | 1.2544  | 1.2769  | 1.2996  | 1.3225  | 1.3456  | 1.4400  | 1.5376  | 1.5625  | 1.6900  |
| 3      | 1.0303 | 1.0612 | 1.0927 | 1.1249 | 1.1576 | 1.1910 | 1.2250 | 1.2597 | 1.2950 | 1.3310  | 1.3676  | 1.4049  | 1.4429  | 1.4815  | 1.5209  | 1.5609  | 1.7280  | 1.9066  | 1.9531  | 2.1970  |
| 4      | 1.0406 | 1.0824 | 1.1255 | 1.1699 | 1.2155 | 1.2625 | 1.3108 | 1.3605 | 1.4116 | 1.4641  | 1.5181  | 1.5735  | 1.6305  | 1.6890  | 1.7490  | 1.8106  | 2.0736  | 2.3642  | 2.4414  | 2.8561  |
| 5      | 1.0510 | 1.1041 | 1.1593 | 1.2167 | 1.2763 | 1.3382 | 1.4026 | 1.4693 | 1.5386 | 1.6105  | 1.6851  | 1.7623  | 1.8424  | 1.9254  | 2.0114  | 2.1003  | 2.4883  | 2.9316  | 3.0518  | 3.7129  |
| 6      | 1.0615 | 1.1262 | 1.1941 | 1.2653 | 1.3401 | 1.4185 | 1.5007 | 1.5869 | 1.6771 | 1.7716  | 1.8704  | 1.9738  | 2.0820  | 2.1950  | 2.3131  | 2.4364  | 2.9860  | 3.6352  | 3.8147  | 4.8268  |
| 7      | 1.0721 | 1.1487 | 1.2299 | 1.3159 | 1.4071 | 1.5036 | 1.6058 | 1.7138 | 1.8280 | 1.9487  | 2.0762  | 2.2107  | 2.3526  | 2.5023  | 2.6600  | 2.8262  | 3.5832  | 4.5077  | 4.7684  | 6.2749  |
| 8      | 1.0829 | 1.1717 | 1.2668 | 1.3686 | 1.4775 | 1.5938 | 1.7182 | 1.8509 | 1.9926 | 2.1436  | 2.3045  | 2.4760  | 2.6584  | 2.8526  | 3.0590  | 3.2784  | 4.2998  | 5.5895  | 5.9605  | 8.1573  |
| 9      | 1.0937 | 1.1951 | 1.3048 | 1.4233 | 1.5513 | 1.6895 | 1.8385 | 1.9990 | 2.1719 | 2.3579  | 2.5580  | 2.7731  | 3.0040  | 3.2519  | 3.5179  | 3.8030  | 5.1598  | 6.9310  | 7.4506  | 10.604  |
| 10     | 1.1046 | 1.2190 | 1.3439 | 1.4802 | 1.6289 | 1.7908 | 1.9672 | 2.1589 | 2.3674 | 2.5937  | 2.8394  | 3.1058  | 3.3946  | 3.7072  | 4.0456  | 4.4114  | 6.1917  | 8.5944  | 9.3132  | 13.786  |
| 11     | 1.1157 | 1.2434 | 1.3842 | 1.5395 | 1.7103 | 1.8983 | 2.1049 | 2.3316 | 2.5804 | 2.8531  | 3.1518  | 3.4785  | 3.8359  | 4.2262  | 4.6524  | 5.1173  | 7.4301  | 10.657  | 11.642  | 17.922  |
| 12     | 1.1268 | 1.2682 | 1.4258 | 1.6010 | 1.7959 | 2.0122 | 2.2522 | 2.5182 | 2.8127 | 3.1384  | 3.4985  | 3.8960  | 4.3345  | 4.8179  | 5.3503  | 5.9360  | 8.9161  | 13.215  | 14.552  | 23.298  |
| 13     | 1.1381 | 1.2936 | 1.4685 | 1.6651 | 1.8856 | 2.1329 | 2.4098 | 2.7196 | 3.0658 | 3.4523  | 3.8833  | 4.3635  | 4.8980  | 5.4924  | 6.1528  | 6.8858  | 10.699  | 16.386  | 18.190  | 30.288  |
| 14     | 1.1495 | 1.3195 | 1.5126 | 1.7317 | 1.9799 | 2.2609 | 2.5765 | 2.9372 | 3.3417 | 3.7975  | 4.3104  | 4.8871  | 5.5348  | 6.2613  | 7.0757  | 7.9875  | 12.839  | 20.319  | 22.737  | 39.374  |
| 15     | 1.1610 | 1.3459 | 1.5580 | 1.8009 | 2.0789 | 2.3966 | 2.7590 | 3.1722 | 3.6425 | 4.1772  | 4.7846  | 5.4736  | 6.2543  | 7.1379  | 8.1371  | 9.2655  | 15.407  | 25.196  | 28.422  | 51.186  |
| 16     | 1.1726 | 1.3728 | 1.6047 | 1.8730 | 2.1829 | 2.5404 | 2.9522 | 3.4259 | 3.9703 | 4.5950  | 5.3109  | 6.1304  | 7.0673  | 8.1372  | 9.3576  | 10.748  | 18.488  | 31.243  | 35.527  | 66.542  |
| 17     | 1.1843 | 1.4002 | 1.6528 | 1.9479 | 2.2920 | 2.6928 | 3.1588 | 3.7000 | 4.3276 | 5.0545  | 5.8951  | 6.8660  | 7.9861  | 9.2765  | 10.761  | 12.468  | 22.186  | 38.741  | 44.409  | 86.504  |
| 18     | 1.1961 | 1.4282 | 1.7024 | 2.0258 | 2.4066 | 2.8543 | 3.3799 | 3.9960 | 4.7171 | 5.5599  | 6.5436  | 7.6900  | 9.0243  | 10.575  | 12.375  | 14.463  | 26.623  | 48.039  | 55.511  | 112.455 |
| 19     | 1.2081 | 1.4568 | 1.7535 | 2.1058 | 2.5270 | 3.0256 | 3.6165 | 4.3157 | 5.1417 | 6.1159  | 7.2633  | 8.6128  | 10.197  | 12.056  | 14.232  | 16.777  | 31.948  | 59.568  | 69.389  | 146.192 |
| 20     | 1.2202 | 1.4859 | 1.8061 | 2.1911 | 2.6533 | 3.2071 | 3.8697 | 4.6610 | 5.6044 | 6.7275  | 8.0623  | 9.6463  | 11.523  | 13.743  | 16.367  | 19.461  | 38.338  | 73.864  | 86.736  | 190.050 |
| 21     | 1.2324 | 1.5157 | 1.8603 | 2.2788 | 2.7860 | 3.3996 | 4.1406 | 5.0338 | 6.1088 | 7.4002  | 8.9492  | 10.804  | 13.021  | 15.668  | 18.822  | 22.574  | 46.005  | 91.592  | 108.420 | 247.065 |
| 22     | 1.2447 | 1.5460 | 1.9161 | 2.3699 | 2.9253 | 3.6035 | 4.4304 | 5.4365 | 6.6586 | 8.1403  | 9.9336  | 12.100  | 14.714  | 17.861  | 21.645  | 26.186  | 55.206  | 113.574 | 135.525 | 321.184 |
| 23     | 1.2572 | 1.5769 | 1.9736 | 2.4647 | 3.0715 | 3.8197 | 4.7405 | 5.8715 | 7.2879 | 8.9543  | 11.026  | 13.552  | 16.527  | 20.362  | 24.891  | 30.376  | 66.247  | 140.831 | 169.407 | 417.539 |
| 24     | 1.2697 | 1.6084 | 2.0328 | 2.5633 | 3.2251 | 4.0489 | 5.0724 | 6.3412 | 7.9111 | 9.8497  | 12.239  | 15.179  | 18.788  | 23.212  | 28.625  | 35.236  | 79.497  | 174.631 | 211.758 | 542.801 |
| 25     | 1.2824 | 1.6406 | 2.0938 | 2.6658 | 3.3864 | 4.2919 | 5.4274 | 6.8485 | 8.6231 | 10.835  | 13.585  | 17.000  | 21.231  | 26.462  | 32.919  | 40.874  | 95.396  | 216.542 | 264.698 | 705.641 |
| 30     | 1.3478 | 1.8114 | 2.4273 | 3.2434 | 4.3219 | 5.7435 | 7.6123 | 10.063 | 13.268 | 17.449  | 22.892  | 29.960  | 39.116  | 50.950  | 66.212  | 85.850  | 237.376 | 634.820 | 807.794 | *       |
| 35     | 1.4166 | 1.9999 | 2.8139 | 3.9461 | 5.5160 | 7.6861 | 10.677 | 14.795 | 20.414 | 28.102  | 38.575  | 52.800  | 72.069  | 98.100  | 133.176 | 180.314 | 590.668 | *       | *       | *       |
| 36     | 1.4308 | 2.0399 | 2.8983 | 4.1039 | 5.7918 | 8.1473 | 11.424 | 15.968 | 22.251 | 30.913  | 42.818  | 59.136  | 81.437  | 111.834 | 153.152 | 209.164 | 708.802 | *       | *       | *       |
| 40     | 1.4889 | 2.2080 | 3.2620 | 4.8010 | 7.0400 | 10.286 | 14.974 | 21.725 | 31.409 | 45.259  | 65.001  | 93.051  | 132.782 | 188.884 | 267.964 | 378.721 | *       | *       | *       | *       |
| 50     | 1.6446 | 2.6916 | 4.3839 | 7.1067 | 11.467 | 18.420 | 29.457 | 46.902 | 74.358 | 117.391 | 184.565 | 289.002 | 450.736 | 700.233 | *       | *       | *       | *       | *       | *       |

Table A-2 Future Value Interest Factors for a One-Dollar Annuity Compounded at  $k$  Percent for  $n$  Periods:  $FVIFA_{k,n} = [(1 + k)^n - 1] / k$ 

| Period | 1%     | 2%     | 3%      | 4%      | 5%      | 6%      | 7%      | 8%      | 9%      | 10%     | 11%     | 12%     | 13%     | 14%     | 15%     | 16%     | 20%     | 24%     | 25%     | 30%     |
|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1      | 1.0000 | 1.0200 | 1.0300  | 1.0400  | 1.0500  | 1.0600  | 1.0700  | 1.0800  | 1.0900  | 1.1000  | 1.1100  | 1.1200  | 1.1300  | 1.1400  | 1.1500  | 1.1600  | 1.2000  | 1.2400  | 1.2500  | 1.3000  |
| 2      | 2.0100 | 2.0200 | 2.0300  | 2.0400  | 2.0500  | 2.0600  | 2.0700  | 2.0800  | 2.0900  | 2.1000  | 2.1100  | 2.1200  | 2.1300  | 2.1400  | 2.1500  | 2.1600  | 2.2000  | 2.2400  | 2.2500  | 2.3000  |
| 3      | 3.0301 | 3.0604 | 3.0909  | 3.1216  | 3.1525  | 3.1836  | 3.2149  | 3.2464  | 3.2781  | 3.3100  | 3.3421  | 3.3744  | 3.4069  | 3.4396  | 3.4725  | 3.5056  | 3.6400  | 3.7776  | 3.8125  | 3.9900  |
| 4      | 4.0604 | 4.1216 | 4.1836  | 4.2465  | 4.3101  | 4.3746  | 4.4399  | 4.5061  | 4.5731  | 4.6410  | 4.7097  | 4.7793  | 4.8498  | 4.9211  | 4.9934  | 5.0665  | 5.3680  | 5.6842  | 5.7656  | 6.1870  |
| 5      | 5.1010 | 5.2040 | 5.3091  | 5.4163  | 5.5256  | 5.6371  | 5.7507  | 5.8666  | 5.9847  | 6.1051  | 6.2278  | 6.3528  | 6.4803  | 6.6101  | 6.7424  | 6.8771  | 7.4416  | 8.0484  | 8.2070  | 9.0431  |
| 6      | 6.1520 | 6.3081 | 6.4684  | 6.6330  | 6.8019  | 6.9753  | 7.1533  | 7.3359  | 7.5233  | 7.7156  | 7.9129  | 8.1152  | 8.3227  | 8.5355  | 8.7537  | 8.9775  | 9.9299  | 10.980  | 11.259  | 12.756  |
| 7      | 7.2135 | 7.4343 | 7.6625  | 7.8983  | 8.1420  | 8.3938  | 8.6540  | 8.9228  | 9.2004  | 9.4872  | 9.7833  | 10.089  | 10.405  | 10.730  | 11.067  | 11.414  | 12.916  | 14.615  | 15.073  | 17.583  |
| 8      | 8.2857 | 8.5830 | 8.8923  | 9.2142  | 9.5491  | 9.8975  | 10.260  | 10.637  | 11.028  | 11.436  | 11.859  | 12.300  | 12.757  | 13.233  | 13.727  | 14.240  | 16.499  | 19.123  | 19.842  | 23.858  |
| 9      | 9.3685 | 9.7546 | 10.159  | 10.583  | 11.027  | 11.491  | 11.978  | 12.488  | 13.021  | 13.579  | 14.164  | 14.776  | 15.416  | 16.085  | 16.786  | 17.519  | 20.799  | 24.712  | 25.802  | 32.015  |
| 10     | 10.462 | 10.950 | 11.464  | 12.006  | 12.578  | 13.181  | 13.816  | 14.487  | 15.193  | 15.937  | 16.722  | 17.549  | 18.420  | 19.337  | 20.304  | 21.321  | 25.959  | 31.643  | 33.253  | 42.619  |
| 11     | 11.567 | 12.169 | 12.808  | 13.486  | 14.207  | 14.972  | 15.784  | 16.645  | 17.560  | 18.531  | 19.561  | 20.655  | 21.814  | 23.045  | 24.349  | 25.733  | 32.150  | 40.238  | 42.566  | 56.405  |
| 12     | 12.683 | 13.412 | 14.192  | 15.026  | 15.917  | 16.870  | 17.888  | 18.977  | 20.141  | 21.384  | 22.713  | 24.133  | 25.650  | 27.271  | 29.002  | 30.850  | 39.581  | 50.895  | 54.208  | 74.327  |
| 13     | 13.809 | 14.680 | 15.618  | 16.627  | 17.713  | 18.882  | 20.141  | 21.495  | 22.953  | 24.523  | 26.212  | 28.029  | 29.985  | 32.089  | 34.352  | 36.786  | 48.497  | 64.110  | 68.760  | 97.625  |
| 14     | 14.947 | 15.974 | 17.086  | 18.292  | 19.599  | 21.015  | 22.550  | 24.215  | 26.019  | 27.975  | 30.095  | 32.393  | 34.883  | 37.581  | 40.505  | 43.672  | 59.196  | 80.496  | 86.949  | 127.913 |
| 15     | 16.097 | 17.293 | 18.589  | 20.024  | 21.579  | 23.276  | 25.129  | 27.152  | 29.361  | 31.772  | 34.405  | 37.280  | 40.417  | 43.842  | 47.580  | 51.660  | 72.035  | 100.815 | 109.687 | 167.286 |
| 16     | 17.258 | 18.639 | 20.157  | 21.825  | 23.657  | 25.673  | 27.888  | 30.324  | 33.003  | 35.950  | 39.190  | 42.753  | 46.672  | 50.980  | 55.717  | 60.925  | 87.442  | 126.011 | 138.109 | 218.472 |
| 17     | 18.430 | 20.012 | 21.762  | 23.698  | 25.840  | 28.213  | 30.840  | 33.750  | 36.974  | 40.545  | 44.501  | 48.884  | 53.739  | 59.118  | 65.075  | 71.673  | 105.931 | 157.253 | 173.636 | 285.014 |
| 18     | 19.615 | 21.412 | 23.414  | 25.645  | 28.132  | 30.906  | 33.999  | 37.450  | 41.301  | 45.599  | 50.396  | 55.750  | 61.725  | 68.394  | 75.836  | 84.141  | 128.117 | 195.994 | 218.045 | 371.518 |
| 19     | 20.811 | 22.841 | 25.117  | 27.671  | 30.539  | 33.760  | 37.379  | 41.446  | 46.018  | 51.159  | 56.939  | 63.440  | 70.749  | 78.969  | 88.212  | 98.603  | 154.740 | 244.033 | 273.556 | 483.973 |
| 20     | 22.019 | 24.297 | 26.870  | 29.778  | 33.066  | 36.786  | 40.995  | 45.762  | 51.160  | 57.275  | 64.203  | 72.052  | 80.947  | 91.025  | 102.444 | 115.380 | 186.688 | 303.601 | 342.945 | 630.165 |
| 21     | 23.239 | 25.783 | 28.676  | 31.969  | 35.719  | 39.993  | 44.865  | 50.423  | 56.765  | 64.002  | 72.265  | 81.699  | 92.470  | 104.768 | 118.810 | 134.841 | 225.026 | 377.465 | 429.681 | 820.215 |
| 22     | 24.472 | 27.299 | 30.537  | 34.248  | 38.505  | 43.392  | 49.006  | 55.457  | 62.873  | 71.403  | 81.214  | 92.503  | 105.491 | 120.436 | 137.632 | 157.415 | 271.031 | 469.056 | 538.101 | *       |
| 23     | 25.716 | 28.845 | 32.453  | 36.618  | 41.430  | 46.996  | 53.436  | 60.893  | 69.532  | 79.543  | 91.148  | 104.603 | 120.205 | 138.297 | 159.276 | 183.601 | 326.237 | 582.630 | 673.626 | *       |
| 24     | 26.973 | 30.422 | 34.426  | 39.083  | 44.502  | 50.816  | 58.177  | 66.765  | 76.790  | 88.497  | 102.174 | 118.155 | 136.831 | 158.659 | 184.168 | 213.978 | 392.484 | 723.461 | 843.033 | *       |
| 25     | 28.243 | 32.030 | 36.459  | 41.646  | 47.727  | 54.865  | 63.249  | 73.106  | 84.701  | 98.347  | 114.413 | 133.334 | 155.620 | 181.871 | 212.793 | 249.214 | 471.981 | 898.092 | *       | *       |
| 30     | 34.785 | 40.568 | 47.575  | 56.085  | 66.439  | 79.058  | 94.461  | 113.283 | 136.308 | 164.494 | 199.021 | 241.333 | 293.199 | 356.787 | 434.745 | 530.312 | *       | *       | *       | *       |
| 35     | 41.660 | 49.994 | 60.462  | 73.652  | 90.320  | 111.435 | 138.237 | 172.317 | 215.711 | 271.024 | 341.590 | 431.663 | 546.681 | 693.573 | 881.470 | *       | *       | *       | *       | *       |
| 36     | 43.077 | 51.994 | 63.276  | 77.598  | 95.836  | 119.121 | 148.913 | 187.102 | 236.125 | 299.127 | 380.164 | 484.463 | 618.749 | 791.673 | *       | *       | *       | *       | *       | *       |
| 40     | 48.886 | 60.402 | 75.401  | 95.026  | 120.800 | 154.762 | 199.635 | 259.057 | 337.882 | 442.593 | 581.826 | 767.091 | *       | *       | *       | *       | *       | *       | *       | *       |
| 50     | 64.463 | 84.579 | 112.797 | 152.667 | 209.348 | 290.336 | 406.529 | 573.770 | 815.084 | *       | *       | *       | *       | *       | *       | *       | *       | *       | *       | *       |



Table A-3 Present Value Interest Factors for One Dollar Discounted at  $k$  Percent for  $n$  Periods:  $PVIF_{k,n} = 1 / (1 + k)^n$ 

| Period | 1%     | 2%     | 3%     | 4%     | 5%     | 6%     | 7%     | 8%     | 9%     | 10%    | 11%    | 12%    | 13%    | 14%    | 15%    | 16%    | 20%    | 24%    | 25%    | 30%    |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1      | 0.9901 | 0.9804 | 0.9709 | 0.9615 | 0.9524 | 0.9434 | 0.9346 | 0.9259 | 0.9174 | 0.9091 | 0.9009 | 0.8929 | 0.8850 | 0.8772 | 0.8696 | 0.8621 | 0.8333 | 0.8065 | 0.8000 | 0.7692 |
| 2      | 0.9803 | 0.9612 | 0.9426 | 0.9246 | 0.9070 | 0.8900 | 0.8734 | 0.8573 | 0.8417 | 0.8264 | 0.8116 | 0.7972 | 0.7831 | 0.7695 | 0.7561 | 0.7432 | 0.6944 | 0.6504 | 0.6400 | 0.5917 |
| 3      | 0.9706 | 0.9423 | 0.9151 | 0.8890 | 0.8638 | 0.8396 | 0.8163 | 0.7938 | 0.7722 | 0.7513 | 0.7312 | 0.7118 | 0.6931 | 0.6750 | 0.6575 | 0.6407 | 0.5787 | 0.5245 | 0.5120 | 0.4552 |
| 4      | 0.9610 | 0.9238 | 0.8885 | 0.8548 | 0.8227 | 0.7921 | 0.7629 | 0.7350 | 0.7084 | 0.6830 | 0.6587 | 0.6355 | 0.6133 | 0.5921 | 0.5718 | 0.5523 | 0.4823 | 0.4230 | 0.4096 | 0.3501 |
| 5      | 0.9515 | 0.9057 | 0.8626 | 0.8219 | 0.7835 | 0.7473 | 0.7130 | 0.6806 | 0.6499 | 0.6209 | 0.5935 | 0.5674 | 0.5428 | 0.5194 | 0.4972 | 0.4761 | 0.4019 | 0.3411 | 0.3277 | 0.2693 |
| 6      | 0.9420 | 0.8880 | 0.8375 | 0.7903 | 0.7462 | 0.7050 | 0.6663 | 0.6302 | 0.5963 | 0.5645 | 0.5346 | 0.5066 | 0.4803 | 0.4556 | 0.4323 | 0.4104 | 0.3349 | 0.2751 | 0.2621 | 0.2072 |
| 7      | 0.9327 | 0.8706 | 0.8131 | 0.7599 | 0.7107 | 0.6651 | 0.6227 | 0.5835 | 0.5470 | 0.5132 | 0.4817 | 0.4523 | 0.4251 | 0.3996 | 0.3759 | 0.3538 | 0.2791 | 0.2218 | 0.2097 | 0.1594 |
| 8      | 0.9235 | 0.8535 | 0.7894 | 0.7307 | 0.6768 | 0.6274 | 0.5820 | 0.5403 | 0.5019 | 0.4665 | 0.4339 | 0.4039 | 0.3762 | 0.3506 | 0.3269 | 0.3050 | 0.2326 | 0.1789 | 0.1678 | 0.1226 |
| 9      | 0.9143 | 0.8368 | 0.7664 | 0.7026 | 0.6446 | 0.5919 | 0.5439 | 0.5002 | 0.4604 | 0.4241 | 0.3909 | 0.3606 | 0.3329 | 0.3075 | 0.2843 | 0.2630 | 0.1938 | 0.1443 | 0.1342 | 0.0943 |
| 10     | 0.9053 | 0.8203 | 0.7441 | 0.6756 | 0.6139 | 0.5584 | 0.5083 | 0.4632 | 0.4224 | 0.3855 | 0.3522 | 0.3220 | 0.2946 | 0.2697 | 0.2472 | 0.2267 | 0.1615 | 0.1164 | 0.1074 | 0.0725 |
| 11     | 0.8963 | 0.8043 | 0.7224 | 0.6496 | 0.5847 | 0.5268 | 0.4751 | 0.4289 | 0.3875 | 0.3505 | 0.3173 | 0.2875 | 0.2607 | 0.2366 | 0.2149 | 0.1954 | 0.1346 | 0.0938 | 0.0859 | 0.0558 |
| 12     | 0.8874 | 0.7885 | 0.7014 | 0.6246 | 0.5568 | 0.4970 | 0.4440 | 0.3971 | 0.3555 | 0.3186 | 0.2858 | 0.2567 | 0.2307 | 0.2076 | 0.1869 | 0.1685 | 0.1122 | 0.0757 | 0.0687 | 0.0429 |
| 13     | 0.8787 | 0.7730 | 0.6810 | 0.6006 | 0.5303 | 0.4688 | 0.4150 | 0.3677 | 0.3262 | 0.2897 | 0.2575 | 0.2292 | 0.2042 | 0.1821 | 0.1625 | 0.1452 | 0.0935 | 0.0610 | 0.0550 | 0.0330 |
| 14     | 0.8700 | 0.7579 | 0.6611 | 0.5775 | 0.5051 | 0.4423 | 0.3878 | 0.3405 | 0.2992 | 0.2633 | 0.2320 | 0.2046 | 0.1807 | 0.1597 | 0.1413 | 0.1252 | 0.0779 | 0.0492 | 0.0440 | 0.0254 |
| 15     | 0.8613 | 0.7430 | 0.6419 | 0.5553 | 0.4810 | 0.4173 | 0.3624 | 0.3152 | 0.2745 | 0.2394 | 0.2090 | 0.1827 | 0.1599 | 0.1401 | 0.1229 | 0.1079 | 0.0649 | 0.0397 | 0.0352 | 0.0195 |
| 16     | 0.8528 | 0.7284 | 0.6232 | 0.5339 | 0.4581 | 0.3936 | 0.3387 | 0.2919 | 0.2519 | 0.2176 | 0.1883 | 0.1631 | 0.1415 | 0.1229 | 0.1069 | 0.0930 | 0.0541 | 0.0320 | 0.0281 | 0.0150 |
| 17     | 0.8444 | 0.7142 | 0.6050 | 0.5134 | 0.4363 | 0.3714 | 0.3166 | 0.2703 | 0.2311 | 0.1978 | 0.1696 | 0.1456 | 0.1252 | 0.1078 | 0.0929 | 0.0802 | 0.0451 | 0.0258 | 0.0225 | 0.0116 |
| 18     | 0.8360 | 0.7002 | 0.5874 | 0.4936 | 0.4155 | 0.3503 | 0.2959 | 0.2502 | 0.2120 | 0.1799 | 0.1528 | 0.1300 | 0.1108 | 0.0946 | 0.0808 | 0.0691 | 0.0376 | 0.0208 | 0.0180 | 0.0089 |
| 19     | 0.8277 | 0.6864 | 0.5703 | 0.4746 | 0.3957 | 0.3305 | 0.2765 | 0.2317 | 0.1945 | 0.1635 | 0.1377 | 0.1161 | 0.0981 | 0.0829 | 0.0703 | 0.0596 | 0.0313 | 0.0168 | 0.0144 | 0.0068 |
| 20     | 0.8195 | 0.6730 | 0.5537 | 0.4564 | 0.3769 | 0.3118 | 0.2584 | 0.2145 | 0.1784 | 0.1486 | 0.1240 | 0.1037 | 0.0868 | 0.0728 | 0.0611 | 0.0514 | 0.0261 | 0.0135 | 0.0115 | 0.0053 |
| 21     | 0.8114 | 0.6598 | 0.5375 | 0.4388 | 0.3589 | 0.2942 | 0.2415 | 0.1987 | 0.1637 | 0.1351 | 0.1117 | 0.0926 | 0.0768 | 0.0638 | 0.0531 | 0.0443 | 0.0217 | 0.0109 | 0.0092 | 0.0040 |
| 22     | 0.8034 | 0.6468 | 0.5219 | 0.4220 | 0.3418 | 0.2775 | 0.2257 | 0.1839 | 0.1502 | 0.1228 | 0.1007 | 0.0826 | 0.0680 | 0.0560 | 0.0462 | 0.0382 | 0.0181 | 0.0088 | 0.0074 | 0.0031 |
| 23     | 0.7954 | 0.6342 | 0.5067 | 0.4057 | 0.3256 | 0.2618 | 0.2109 | 0.1703 | 0.1378 | 0.1117 | 0.0907 | 0.0738 | 0.0601 | 0.0491 | 0.0402 | 0.0329 | 0.0151 | 0.0071 | 0.0059 | 0.0024 |
| 24     | 0.7876 | 0.6217 | 0.4919 | 0.3901 | 0.3101 | 0.2470 | 0.1971 | 0.1577 | 0.1264 | 0.1015 | 0.0817 | 0.0659 | 0.0532 | 0.0431 | 0.0349 | 0.0284 | 0.0126 | 0.0057 | 0.0047 | 0.0018 |
| 25     | 0.7798 | 0.6095 | 0.4776 | 0.3751 | 0.2953 | 0.2330 | 0.1842 | 0.1460 | 0.1160 | 0.0923 | 0.0736 | 0.0588 | 0.0471 | 0.0378 | 0.0304 | 0.0245 | 0.0105 | 0.0046 | 0.0038 | 0.0014 |
| 30     | 0.7419 | 0.5521 | 0.4120 | 0.3083 | 0.2314 | 0.1741 | 0.1314 | 0.0994 | 0.0754 | 0.0573 | 0.0437 | 0.0334 | 0.0256 | 0.0196 | 0.0151 | 0.0116 | 0.0042 | 0.0016 | 0.0012 | *      |
| 35     | 0.7059 | 0.5000 | 0.3554 | 0.2534 | 0.1813 | 0.1301 | 0.0937 | 0.0676 | 0.0490 | 0.0356 | 0.0259 | 0.0189 | 0.0139 | 0.0102 | 0.0075 | 0.0055 | 0.0017 | 0.0005 | *      | *      |
| 36     | 0.6989 | 0.4902 | 0.3450 | 0.2437 | 0.1727 | 0.1227 | 0.0875 | 0.0626 | 0.0449 | 0.0323 | 0.0234 | 0.0169 | 0.0123 | 0.0089 | 0.0065 | 0.0048 | 0.0014 | *      | *      | *      |
| 40     | 0.6717 | 0.4529 | 0.3066 | 0.2083 | 0.1420 | 0.0972 | 0.0668 | 0.0460 | 0.0318 | 0.0221 | 0.0154 | 0.0107 | 0.0075 | 0.0053 | 0.0037 | 0.0026 | 0.0007 | *      | *      | *      |
| 50     | 0.6080 | 0.3715 | 0.2281 | 0.1407 | 0.0872 | 0.0543 | 0.0339 | 0.0213 | 0.0134 | 0.0085 | 0.0054 | 0.0035 | 0.0022 | 0.0014 | 0.0009 | 0.0006 | *      | *      | *      | *      |

Table A-4 Present Value Interest Factors for a One-Dollar Annuity Discounted at k Percent for n Periods:  $PVIFA = [1 - 1/(1 + k)^n] / k$ 

| Period | 1%     | 2%     | 3%     | 4%     | 5%     | 6%     | 7%     | 8%     | 9%     | 10%    | 11%    | 12%    | 13%    | 14%    | 15%    | 16%    | 20%    | 24%    | 25%    | 30%    |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1      | 0.9901 | 0.9804 | 0.9709 | 0.9615 | 0.9524 | 0.9434 | 0.9346 | 0.9259 | 0.9174 | 0.9091 | 0.9009 | 0.8929 | 0.8850 | 0.8772 | 0.8696 | 0.8621 | 0.8333 | 0.8065 | 0.8000 | 0.7692 |
| 2      | 1.9704 | 1.9416 | 1.9135 | 1.8861 | 1.8594 | 1.8334 | 1.8080 | 1.7833 | 1.7591 | 1.7355 | 1.7125 | 1.6901 | 1.6681 | 1.6467 | 1.6257 | 1.6052 | 1.5278 | 1.4568 | 1.4400 | 1.3609 |
| 3      | 2.9410 | 2.8839 | 2.8286 | 2.7751 | 2.7232 | 2.6730 | 2.6243 | 2.5771 | 2.5313 | 2.4869 | 2.4437 | 2.4018 | 2.3612 | 2.3216 | 2.2832 | 2.2459 | 2.1065 | 1.9813 | 1.9520 | 1.8161 |
| 4      | 3.9020 | 3.8077 | 3.7171 | 3.6299 | 3.5460 | 3.4651 | 3.3872 | 3.3121 | 3.2397 | 3.1699 | 3.1024 | 3.0373 | 2.9745 | 2.9137 | 2.8550 | 2.7982 | 2.5887 | 2.4043 | 2.3616 | 2.1662 |
| 5      | 4.8534 | 4.7135 | 4.5797 | 4.4518 | 4.3295 | 4.2124 | 4.1002 | 3.9927 | 3.8897 | 3.7908 | 3.6959 | 3.6048 | 3.5172 | 3.4331 | 3.3522 | 3.2743 | 2.9906 | 2.7454 | 2.6893 | 2.4356 |
| 6      | 5.7955 | 5.6014 | 5.4172 | 5.2421 | 5.0757 | 4.9173 | 4.7665 | 4.6229 | 4.4859 | 4.3553 | 4.2305 | 4.1114 | 3.9975 | 3.8887 | 3.7845 | 3.6847 | 3.3255 | 3.0205 | 2.9514 | 2.6427 |
| 7      | 6.7282 | 6.4720 | 6.2303 | 6.0021 | 5.7864 | 5.5824 | 5.3893 | 5.2064 | 5.0330 | 4.8684 | 4.7122 | 4.5638 | 4.4226 | 4.2883 | 4.1604 | 4.0386 | 3.6046 | 3.2423 | 3.1611 | 2.8021 |
| 8      | 7.6517 | 7.3255 | 7.0197 | 6.7327 | 6.4632 | 6.2098 | 5.9713 | 5.7466 | 5.5348 | 5.3349 | 5.1461 | 4.9676 | 4.7988 | 4.6389 | 4.4873 | 4.3436 | 3.8372 | 3.4212 | 3.3289 | 2.9247 |
| 9      | 8.5660 | 8.1622 | 7.7861 | 7.4353 | 7.1078 | 6.8017 | 6.5152 | 6.2469 | 5.9952 | 5.7590 | 5.5370 | 5.3282 | 5.1317 | 4.9464 | 4.7716 | 4.6065 | 4.0310 | 3.5655 | 3.4631 | 3.0190 |
| 10     | 9.4713 | 8.9826 | 8.5302 | 8.1109 | 7.7217 | 7.3601 | 7.0236 | 6.7101 | 6.4177 | 6.1446 | 5.8892 | 5.6502 | 5.4262 | 5.2161 | 5.0188 | 4.8332 | 4.1925 | 3.6819 | 3.5705 | 3.0915 |
| 11     | 10.368 | 9.7868 | 9.2526 | 8.7605 | 8.3064 | 7.8869 | 7.4987 | 7.1390 | 6.8052 | 6.4951 | 6.2065 | 5.9377 | 5.6869 | 5.4527 | 5.2337 | 5.0286 | 4.3271 | 3.7757 | 3.6564 | 3.1473 |
| 12     | 11.255 | 10.575 | 9.9540 | 9.3851 | 8.8633 | 8.3838 | 7.9427 | 7.5361 | 7.1607 | 6.8137 | 6.4924 | 6.1944 | 5.9176 | 5.6603 | 5.4206 | 5.1971 | 4.4392 | 3.8514 | 3.7251 | 3.1903 |
| 13     | 12.134 | 11.348 | 10.635 | 9.9856 | 9.3936 | 8.8527 | 8.3577 | 7.9038 | 7.4869 | 7.1034 | 6.7499 | 6.4235 | 6.1218 | 5.8424 | 5.5831 | 5.3423 | 4.5327 | 3.9124 | 3.7801 | 3.2233 |
| 14     | 13.004 | 12.106 | 11.296 | 10.563 | 9.8986 | 9.2950 | 8.7455 | 8.2442 | 7.7862 | 7.3667 | 6.9819 | 6.6282 | 6.3025 | 6.0021 | 5.7245 | 5.4675 | 4.6106 | 3.9616 | 3.8241 | 3.2487 |
| 15     | 13.865 | 12.849 | 11.938 | 11.118 | 10.380 | 9.7122 | 9.1079 | 8.5595 | 8.0607 | 7.6061 | 7.1909 | 6.8109 | 6.4624 | 6.1422 | 5.8474 | 5.5755 | 4.6755 | 4.0013 | 3.8593 | 3.2682 |
| 16     | 14.718 | 13.578 | 12.561 | 11.652 | 10.838 | 10.106 | 9.4466 | 8.8514 | 8.3126 | 7.8237 | 7.3792 | 6.9740 | 6.6039 | 6.2651 | 5.9542 | 5.6685 | 4.7296 | 4.0333 | 3.8874 | 3.2832 |
| 17     | 15.562 | 14.292 | 13.166 | 12.166 | 11.274 | 10.477 | 9.7632 | 9.1216 | 8.5436 | 8.0216 | 7.5488 | 7.1196 | 6.7291 | 6.3729 | 6.0472 | 5.7487 | 4.7746 | 4.0591 | 3.9099 | 3.2948 |
| 18     | 16.398 | 14.992 | 13.754 | 12.659 | 11.690 | 10.828 | 10.059 | 9.3719 | 8.7556 | 8.2014 | 7.7016 | 7.2497 | 6.8399 | 6.4674 | 6.1280 | 5.8178 | 4.8122 | 4.0799 | 3.9279 | 3.3037 |
| 19     | 17.226 | 15.678 | 14.324 | 13.134 | 12.085 | 11.158 | 10.336 | 9.6036 | 8.9501 | 8.3649 | 7.8393 | 7.3658 | 6.9380 | 6.5504 | 6.1982 | 5.8775 | 4.8435 | 4.0967 | 3.9424 | 3.3105 |
| 20     | 18.046 | 16.351 | 14.877 | 13.590 | 12.462 | 11.470 | 10.594 | 9.8181 | 9.1285 | 8.5136 | 7.9633 | 7.4694 | 7.0248 | 6.6231 | 6.2593 | 5.9288 | 4.8696 | 4.1103 | 3.9539 | 3.3158 |
| 21     | 18.857 | 17.011 | 15.415 | 14.029 | 12.821 | 11.764 | 10.836 | 10.017 | 9.2922 | 8.6487 | 8.0751 | 7.5620 | 7.1016 | 6.6870 | 6.3125 | 5.9731 | 4.8913 | 4.1212 | 3.9631 | 3.3198 |
| 22     | 19.660 | 17.698 | 15.937 | 14.451 | 13.163 | 12.042 | 11.061 | 10.201 | 9.4424 | 8.7715 | 8.1757 | 7.6446 | 7.1695 | 6.7429 | 6.3587 | 6.0113 | 4.9094 | 4.1300 | 3.9705 | 3.3230 |
| 23     | 20.456 | 18.292 | 16.444 | 14.857 | 13.489 | 12.303 | 11.272 | 10.371 | 9.5802 | 8.8832 | 8.2664 | 7.7184 | 7.2297 | 6.7921 | 6.3988 | 6.0442 | 4.9245 | 4.1371 | 3.9764 | 3.3254 |
| 24     | 21.243 | 18.914 | 16.936 | 15.247 | 13.799 | 12.550 | 11.469 | 10.529 | 9.7066 | 8.9847 | 8.3481 | 7.7843 | 7.2829 | 6.8351 | 6.4338 | 6.0726 | 4.9371 | 4.1428 | 3.9811 | 3.3272 |
| 25     | 22.023 | 19.523 | 17.413 | 15.622 | 14.094 | 12.783 | 11.654 | 10.675 | 9.8226 | 9.0770 | 8.4217 | 7.8431 | 7.3300 | 6.8729 | 6.4641 | 6.0971 | 4.9476 | 4.1474 | 3.9849 | 3.3286 |
| 30     | 25.808 | 22.396 | 19.600 | 17.292 | 15.372 | 13.765 | 12.409 | 11.258 | 10.274 | 9.4269 | 8.6938 | 8.0552 | 7.4957 | 7.0027 | 6.5860 | 6.1772 | 4.9789 | 4.1601 | 3.9950 | 3.3321 |
| 35     | 29.409 | 24.999 | 21.487 | 18.665 | 16.374 | 14.498 | 12.948 | 11.655 | 10.567 | 9.6442 | 8.8552 | 8.1755 | 7.5856 | 7.0700 | 6.6166 | 6.2153 | 4.9915 | 4.1644 | 3.9984 | 3.3330 |
| 36     | 30.108 | 25.489 | 21.832 | 18.908 | 16.547 | 14.621 | 13.035 | 11.717 | 10.612 | 9.6765 | 8.8786 | 8.1924 | 7.5979 | 7.0790 | 6.6231 | 6.2201 | 4.9929 | 4.1649 | 3.9987 | 3.3331 |
| 40     | 32.835 | 27.355 | 23.115 | 19.793 | 17.159 | 15.046 | 13.332 | 11.925 | 10.757 | 9.7791 | 8.9511 | 8.2438 | 7.6344 | 7.1050 | 6.6418 | 6.2335 | 4.9966 | 4.1659 | 3.9995 | 3.3332 |
| 50     | 39.196 | 31.424 | 25.730 | 21.482 | 18.256 | 15.762 | 13.801 | 12.233 | 10.962 | 9.9148 | 9.0417 | 8.3045 | 7.6752 | 7.1327 | 6.6805 | 6.2463 | 4.9995 | 4.1666 | 3.9999 | 3.3333 |