



**UNIVERSITI KUALA LUMPUR
BUSINESS SCHOOL**

**FINAL EXAMINATION
JULY 2025 SEMESTER**

COURSE CODE	: EIB11503
COURSE NAME	: MANAGERIAL FINANCE
PROGRAMME NAME	: BACHELOR IN ISLAMIC FINANCE (HONS)
DATE	: 17 SEPTEMBER 2025
TIME	: 9.00 AM-12.00 PM
DURATION	: 3 HOURS

INSTRUCTIONS TO CANDIDATES

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 FOUR (4) questions.
4. Answer ALL questions.
5. Please write your answers on the answer booklet provided.
6. Answer all questions in English language ONLY.
7. This question paper must not be removed from the examination hall.

THERE ARE ELEVEN (11) PAGES OF QUESTIONS, INCLUDING THIS PAGE.

INSTRUCTION: Answer ALL questions.

Please use the answer booklet provided.

Question 1

Kunaffa Bhd. is preparing monthly cash budgets for August and September 2024. The following data are available from the records of the company.

	RM	RM
Month	August	September
Sales	650,000	550,000
Raw materials purchase	215,000	230,000
Direct labour	85,000	90,000
Manufacturing overhead costs	90,000	100,000
Selling and administrative expenses	100,000	120,000

The company has the following business policies:

- i. Collections from customers are expected to be 45% of the sales in the month of sale and 55% in the month following the sale.
- ii. The company pays cash for 60% of the raw materials purchases in the month of purchase and the balance is due in the month following the purchase.
- iii. All other items besides these two are paid in the month they are incurred.

Other pertinent data are as follows:

- iv. Sales in July 2024: RM 500,000
- v. Purchase of raw materials in July 2024: RM 195,000.
- vi. Other receipts:
August : Commission received : RM 7,000
September : Proceeds from the disposal of used equipment RM 11,000.
- vii. Other payments:
August : Debt repaid: RM 40,000
September : Purchase of machinery: RM80,000

September : Annual medical insurance: RM80,000

The company's cash balance on 1st August 2024 is expected to be RM105,000. The company wants to maintain a minimum cash balance of RM100,000. The company will borrow if necessary.

Prepare the following:

- a) A schedule of cash collections from customers.
(4 marks)
- b) A schedule of expected payments for direct material purchases.
(4 marks)
- c) Prepare a cash budget for August and September 2024.
(12 marks)
- d) Explain **two (2)** types of budget.
(2 marks)
- e) Explain **three (3)** benefits of a cash budget for businesses.
(3 marks)

[Total: 25 marks]

Question 2

- a) Beatrice is preparing for retirement and wants to be sure that she has sufficient resources to support her needs throughout her retirement. She predicts that she will require RM40,000 each year for the next 20 years of her retirement. Calculate the amount of money Betty should have saved today, given a 6% return on her assets.
(2 marks)
- b) The college education of Yanny's daughter is anticipated to cost RM50,000 in 10 years, and Yanny intends to put money aside for it. Compute the amount of cash Yanny should save in her investment today to meet her daughter's college fees. Her investment return is assumed to be 7% compounded semi-annually.
(3 marks)

- c) There are two different investment opportunities that Janice intends to put her money into. The first option, Option A, is a payment of RM3,000 at the beginning of each year for five years. Meanwhile, in the seven-year investment tenure offered by Option B, a payment of RM2,500 is made at the beginning of each year. With both choices offering a 7% annual interest rate, Janice needs to decide which option she should go with based on the potential value of the annuity that will be payable in the future. Provide detailed calculations to assist Janice in her decision-making.

(5 marks)

- d) Danish is considering investing in a rental property. He expects the property to generate the following annual rental income: Year 1: RM8,000, Year 2: RM9,000, Year 3: RM10,000, Year 4: RM11,000, Year 5: RM12,000. Determine the net present value of Danish's rental property investment considering both rental income and maintenance costs at a discount rate of 10%. His initial outlay for this project will be RM 22,534.

(3 marks)

- e) Based on the projection above, should Danish proceed with the investing idea? Defend your opinion.

(3 marks)

- f) Purge Sdn Bhd, Rawr Sdn Bhd and Setia Sdn Bhd use different working capital management policies. The summarized Statement of Financial Position is given below:

	Purge (RM)	Rawr (RM)	Setia (RM)
Non-current assets	600,000	600,000	600,000
Current assets	450,000	600,000	900,000
Total assets	1,050,000	1,200,000	1,500,000
Equity	450,000	300,000	750,000
Non-current liability	0	300,000	600,000
Current liabilities	600,000	600,000	150,000
Total liabilities & equity	1,050,000	1,200,000	1,500,000

Discuss the working capital policies of the **three (3)** companies.

(9 marks)

[Total: 25 marks]

Question 3

- a) Nick Nanas, Inc., is considering two mutually exclusive projects, each with an initial investment of RM150,000. The company's board of directors has set a maximum 4-year payback requirement and has set its cost of capital at 9%. The cash inflows associated with the two projects are shown in the following table.

Year	Cash inflows (Cf _t)	
	Project A	Project B
1	RM45,000	RM75,000
2	45,000	60,000
3	45,000	30,000
4	45,000	30,000
5	45,000	30,000
6	45,000	30,000

- i. Calculate the payback period for each project. (2 marks)
 - ii. Calculate the net present value (*NPV*) of each project at 9%. (6 marks)
 - iii. Derive the internal rate of return (*IRR*) of each project. Provide interpolation solution if necessary. (6 marks)
 - iv. Determine the best project for Nick Nanas. Support your answer with a suitable justification. Justify your answer. (6 marks)
- b) Explain the acceptance criteria for NPV related to the firm's market value. (2 marks)
- c) Explain the similarities and differences between net present value (NPV), profitability index (PI), and economic value added (EVA). (3 marks)

[Total: 25 marks]

Question 4

a) Define Cost of Capital.

(2 marks)

b) Explain **FOUR (4)** factors to determine cost of capital.

(8 marks)

c) Radish Inc., Corp has 40% debt, 45% common stocks, and 15% preferred stocks in its capital structure. The firm's estimated after-tax cost of debt is 10%, cost of common stocks is 13%, and cost of preferred stocks is 11%. Calculate the firm's weighted average cost of capital (WACC).

(3 marks)

d) Six companies have a different beta coefficient:

- Company Alice has 0.89.
- Company Bobby has 1.2.
- Company Cherice has 1.67.
- Company Dean has 2.2.
- Company Eliza has 1.56.
- Company Felicia has 2.23.

You should employ the CAPM model to estimate the cost of common stock. Assume that the risk-free rate is 2.75% and the expected market return rate is 14.7%.

(12 marks)

[Total: 25 marks]

END OF EXAMINATION PAPER

FORMULA

- $FV = PV (FVIF\ i\ n)$
- $PV = FV (PVIF\ i\ n)$
- $PB = \frac{IO}{\text{Ann CF}}$
- $PBP = [(n-1)] + [(IO - \text{sum of cash flow before } n) / (\text{cash flow of the year } n)]$
- $NPV = CF (PVIFA\ i\ n) - IO$
- $NPV = \sum [CF (PVIF\ i\ n)] - IO$

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	2.4853	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	1.2289	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	2.6594	2.8566	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	1.8851	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	2.5785	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	1.6328	1.9479	2.2920	2.6928	3.1688	3.7000	4.3276	5.0545	5.8951	6.8680	7.9961	9.2765	10.761	12.468	22.196	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	2.1068	2.5270	3.0256	3.6165	4.3187	5.1417	6.1189	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	247.055
22	1.2447	1.5460	1.9161	2.3699	2.9253	3.6035	4.4304	5.4365	6.6386	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	7.2579	8.9543	11.026	13.552	16.627	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	18.768	23.212	28.625	35.236	78.497	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	7.5123	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	1.9899	2.8139	3.9461	5.5160	7.6661	10.677	14.785	20.414	28.102	38.575	52.800	72.069	98.100	133.176	180.314	590.668	*	*	*
36	1.4308	2.0339	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	10.296	14.974	21.725	31.409	45.259	65.001	93.051	132.782	188.884	267.864	378.721	*	*	*	*
50	1.6446	2.6916	4.3839	7.1057	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	2.0400	2.0900	2.1600	2.2000	2.2600	2.3400	2.4200	2.5000	2.5900	2.6800	2.7700	2.8600	2.9500	3.0400	3.1300	3.2800	3.5200	3.6700	3.8200
3	3.0301	3.0804	3.0909	3.1216	3.1525	3.1836	3.2145	3.2454	3.2761	3.3068	3.3374	3.3681	3.3988	3.4295	3.4602	3.4909	3.6400	3.8800	3.9900	4.1400
4	4.0604	4.1216	4.1336	4.1645	4.1954	4.2263	4.2572	4.2881	4.3190	4.3499	4.3808	4.4117	4.4426	4.4735	4.5044	4.5353	4.6800	4.9200	5.0300	5.1800
5	5.1010	5.2040	5.2091	5.2400	5.2709	5.3018	5.3327	5.3636	5.3945	5.4254	5.4563	5.4872	5.5181	5.5490	5.5799	5.6108	5.7600	6.0000	6.1100	6.2600
6	6.1520	6.3081	6.3084	6.3390	6.3699	6.4008	6.4317	6.4626	6.4935	6.5244	6.5553	6.5862	6.6171	6.6480	6.6789	6.7098	6.8600	7.1000	7.2100	7.3600
7	7.2135	7.4343	7.4255	7.4561	7.4868	7.5175	7.5482	7.5789	7.6096	7.6403	7.6710	7.7017	7.7324	7.7631	7.7938	7.8245	7.9800	8.2200	8.3300	8.4800
8	8.2857	8.5830	8.5693	8.6000	8.6307	8.6614	8.6921	8.7228	8.7535	8.7842	8.8149	8.8456	8.8763	8.9070	8.9377	8.9684	9.1300	9.3700	9.4800	9.6300
9	9.3685	9.7546	9.7359	9.7666	9.7973	9.8280	9.8587	9.8894	9.9201	9.9508	9.9815	10.0122	10.0429	10.0736	10.1043	10.1350	10.3000	10.5400	10.6500	10.8000
10	10.462	10.950	10.925	10.956	10.987	11.018	11.049	11.080	11.111	11.142	11.173	11.204	11.235	11.266	11.297	11.328	11.5000	11.7400	11.8500	12.0000
11	11.567	12.169	12.139	12.170	12.201	12.232	12.263	12.294	12.325	12.356	12.387	12.418	12.449	12.480	12.511	12.542	12.7200	13.0600	13.1700	13.3200
12	12.683	13.412	13.377	13.408	13.439	13.470	13.501	13.532	13.563	13.594	13.625	13.656	13.687	13.718	13.749	13.780	14.0700	14.4100	14.5200	14.6700
13	13.809	14.680	14.640	14.671	14.702	14.733	14.764	14.795	14.826	14.857	14.888	14.919	14.950	14.981	15.012	15.043	15.3500	15.6900	15.8000	15.9500
14	14.947	15.974	15.929	15.960	16.001	16.042	16.083	16.124	16.165	16.206	16.247	16.288	16.329	16.370	16.411	16.452	16.7800	17.1200	17.2300	17.3800
15	16.097	17.293	17.243	17.274	17.315	17.356	17.397	17.438	17.479	17.520	17.561	17.602	17.643	17.684	17.725	17.766	18.1200	18.4600	18.5700	18.7200
16	17.258	18.539	18.484	18.515	18.556	18.597	18.638	18.679	18.720	18.761	18.802	18.843	18.884	18.925	18.966	19.007	19.3800	19.7200	19.8300	20.0000
17	18.430	20.012	19.952	19.983	20.024	20.065	20.106	20.147	20.188	20.229	20.270	20.311	20.352	20.393	20.434	20.475	20.8700	21.2100	21.3200	21.4700
18	19.615	21.412	21.347	21.378	21.419	21.460	21.501	21.542	21.583	21.624	21.665	21.706	21.747	21.788	21.829	21.870	22.2800	22.6200	22.7300	22.8800
19	20.811	22.841	22.771	22.802	22.843	22.884	22.925	22.966	23.007	23.048	23.089	23.130	23.171	23.212	23.253	23.294	23.7200	24.0600	24.1700	24.3200
20	22.019	24.297	24.222	24.253	24.294	24.335	24.376	24.417	24.458	24.499	24.540	24.581	24.622	24.663	24.704	24.745	25.1800	25.5200	25.6300	25.7800
21	23.239	25.783	25.703	25.734	25.775	25.816	25.857	25.898	25.939	25.980	26.021	26.062	26.103	26.144	26.185	26.226	26.6800	27.0200	27.1300	27.2800
22	24.472	27.299	27.214	27.245	27.286	27.327	27.368	27.409	27.450	27.491	27.532	27.573	27.614	27.655	27.696	27.737	28.2000	28.5400	28.6500	28.8000
23	25.716	28.845	28.755	28.786	28.827	28.868	28.909	28.950	28.991	29.032	29.073	29.114	29.155	29.196	29.237	29.278	29.7500	30.0900	30.2000	30.3500
24	26.973	30.422	30.327	30.358	30.399	30.440	30.481	30.522	30.563	30.604	30.645	30.686	30.727	30.768	30.809	30.850	31.3300	31.6700	31.7800	31.9300
25	28.243	32.030	31.930	31.961	32.002	32.043	32.084	32.125	32.166	32.207	32.248	32.289	32.330	32.371	32.412	32.453	32.9400	33.2800	33.3900	33.5400
26																				
27																				
28																				
29																				
30	34.785	40.658	40.558	40.589	40.630	40.671	40.712	40.753	40.794	40.835	40.876	40.917	40.958	40.999	41.040	41.081	41.5800	41.9200	42.0300	42.1800
35	41.860	49.994	49.894	49.925	50.000	50.080	50.160	50.240	50.320	50.400	50.480	50.560	50.640	50.720	50.800	50.880	51.3800	51.7200	51.8300	51.9800
36	43.077	51.994	51.894	51.925	52.000	52.080	52.160	52.240	52.320	52.400	52.480	52.560	52.640	52.720	52.800	52.880	53.3800	53.7200	53.8300	53.9800
40	48.886	60.402	60.302	60.333	60.413	60.493	60.573	60.653	60.733	60.813	60.893	60.973	61.053	61.133	61.213	61.293	61.7900	62.1300	62.2400	62.3900
50	64.463	84.579	84.479	84.510	84.590	84.670	84.750	84.830	84.910	85.000	85.080	85.160	85.240	85.320	85.400	85.480	86.9800	87.3200	87.4300	87.5800

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	0.9428	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	0.8628	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	0.5065	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	0.6766	0.6139	0.5594	0.5093	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	0.1089	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	0.0688	0.0480	0.0348	0.0221	0.0154	0.0107	0.0075	0.0053	0.0037	0.0026	0.0007	*	*	*
50	0.6060	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	3.8907	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	4.6228	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	6.5182	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	6.2085	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	8.5995	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	9.4486	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	13.764	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	13.154	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	17.558	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	9.5902	8.8832	8.2684	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	8.9647	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	6.5660	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	27.365	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	6.6605	6.2463	4.9995	4.1666	3.9999	3.3333