

SULIT



**KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI**

**BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI
KEMENTERIAN PENDIDIKAN TINGGI**

JABATAN PERDAGANGAN

PEPERIKSAAN AKHIR

SESI I : 2024/2025

DPA40103 : FINANCIAL MANAGEMENT 2

TARIKH : 06 DISEMBER 2024

MASA : 3.00 PETANG - 5.00 PETANG (2 JAM)

Kertas ini mengandungi **SEMBILAN (9)** halaman bercetak.
Subjektif (4 soalan)
Dokumen sokongan yang disertakan : Formula dan Jadual Nilai Kini

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

SULIT

INSTRUCTION:

This section consists of **FOUR (4)** questions. Answers **ALL** questions.

ARAHAN:

*Bahagian ini mengandungi **EMPAT (4)** soalan. Jawab **SEMUA** soalan.*

QUESTION 1

- CLO1 (a) List **FIVE (5)** types of Malaysian marketable securities. [5 marks]
- CLO1 (b) Explain **FOUR (4)** roles of Account Receivables in the working capital cycle. [10 marks]
- CLO1 (c) Teega Sdn. Bhd. sells 180,000 units of raw materials per year. Based on the company's policy, a safety stock of 2% from yearly sales is to be maintained. The carrying cost is RM0.60 per unit per year and the ordering costs are RM190. The delivery time is 8 days. Assume that Teega Sdn. Bhd. working time is 360 days per year.
- Calculate:
- Economic Order Quantity
 - Reorder Point
- [10 marks]

SOALAN 1

- CLO1 (a) Nyatakan **LIMA (5)** jenis sekuriti boleh pasar Malaysia.
[5 markah]
- CLO1 (b) Terangkan **EMPAT (4)** peranan Akaun Belum Terima dalam kitaran modal kerja.
[10 markah]
- CLO1 (c) Teega Sdn. Bhd. menjual 180,000 unit bahan mentah setahun. Berdasarkan polisi syarikat, stok keselamatan ditetapkan sebanyak 2% daripada jualan tahunan. Kos bawaan adalah RM0.60 seunit setahun dan kos tempahan adalah RM190. Tempoh penghantaran adalah 8 hari. Andaikan bahawa waktu bekerja bagi Teega Sdn. Bhd. adalah 360 hari setahun.
- Kirakan:
- Kuantiti Pesanan Ekonomi
 - Tahap Pesanan Semula
- [10 markah]

QUESTION 2

- CLO1 (a) Describe **TWO (2)** advantages of short-term financing.
[5 marks]
- CLO1 (b) Lestari Sdn. Bhd. wishes to have additional short-term funds of RM5,000,000. It has excellent relationships with its bank and its suppliers, and a highly respectable credit rating in general. The company maintains normal deposit balances of RM50,000. The company is evaluating the following alternatives:

Alternative 1	Lestari Sdn. Bhd. make a credit purchase on credit terms of 3/15 net 60.
Alternative 2	14% discounted interest loan from RHB Bank and 10% compensating balance is required by the bank.

Alternative 3	Commercial paper bearing a 12% interest rate. The dealer will charge a placement fee of 2% from the amount issued.
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Calculate the effective cost for each alternative. Which alternatives should be chosen by Lestari Sdn. Bhd..

[10 marks]

- CLO1 (c) Gomel Berhad has decided to expand its business and RM800,000 worth of external funds is needed. There are **TWO (2)** sources of financing available:
- Issue common shares at RM25. The company's growth rate is 8% and the most recent dividend paid was RM0.95 per share.
 - Issue preferred shares that pay 11.5% dividend on par value of RM100. Its current price is RM148.

Calculate the expected rate of return for both sources of financing.

[10 marks]

SOALAN 2

- CLO1 (a) *Huraikan DUA (2) kelebihan pembiayaan jangka pendek.*

[5 markah]

- CLO1 (b) *Lestari Sdn. Bhd. memerlukan tambahan dana jangka pendek sebanyak RM5,000,000. Syarikat ini mempunyai hubungan yang sangat baik dengan bank dan pembekalnya serta penarafan kredit yang sangat baik secara amnya. Syarikat biasanya mengekalkan baki deposit sebanyak RM50,000 dalam akaun mereka. Syarikat membuat penilaian berdasarkan alternatif berikut:*

<i>Alternatif 1</i>	<i>Lestari Sdn. Bhd. membuat pembelian kredit dengan syarat kredit 3/15 bersih 60.</i>
<i>Alternatif 2</i>	<i>Pinjaman faedah diskaun 14% daripada RHB dan baki pampasan 10% diperlukan oleh bank.</i>
<i>Alternatif 3</i>	<i>Kertas perdagangan dengan kadar faedah 12%. Peniaga akan mengenakan bayaran penempatan sebanyak 2% daripada jumlah yang dikeluarkan.</i>

Kira kos efektif bagi setiap alternatif. Alternatif manakah yang harus digunakan oleh Lestari Sdn. Bhd..

[10 markah]

CLO1

*(b) Gomel Berhad telah memutuskan untuk mengembangkan perniagaan dan memerlukan dana tambahan sebanyak RM800,000. Terdapat **DUA (2)** jenis sumber pembiayaan:*

- i. Menerbitkan saham biasa pada kadar RM25. Kadar pertumbuhan syarikat adalah 8% dan dividen terkini yang telah dibayar adalah RM0.95 sesaham.*
- ii. Menerbitkan saham keutamaan yang membayar dividen 11.5% pada nilai par RM100. Harga semasanya ialah RM148.*

Kira kadar pulangan dijangka bagi kedua-dua sumber pembiayaan.

[10 markah]

QUESTION 3

- CLO1 (a) Explain **FIVE (5)** steps of capital budgeting process.

[10 marks]

- CLO1 (b) Cucico Sdn Bhd is considering these two mutually exclusive projects which require an initial outlay of RM150,000. Below are the cash flows expected from each type of project. The required rate of return is 12%.

Year	Project ND	Project MT
1	40,000	45,000
2	40,000	48,000
3	40,000	50,000
4	40,000	55,000
5	40,000	60,000

For each type of project above, calculate:

- i. Payback period
- ii. Net present value (NPV)

[10 marks]

- CLO1 (c) Based on your answer in (b), determine which project will be chosen and give the reasons.

[5 marks]

SOALAN 3

- CLO1 (a) Terangkan **LIMA (5)** langkah proses belanjawan modal. [10 markah]

- CLO1 (b) Cucico Sdn Bhd sedang mempertimbangkan untuk melabur dalam dana dua projek yang berasingan melibatkan modal awal bernilai RM150,000. Berikut adalah anggaran aliran tunai dari kedua-dua projek. Kadar pulangan diperlukan adalah 12%.

<i>Tahun</i>	<i>Project ND</i>	<i>Project MT</i>
<i>1</i>	<i>40,000</i>	<i>45,000</i>
<i>2</i>	<i>40,000</i>	<i>48,000</i>
<i>3</i>	<i>40,000</i>	<i>50,000</i>
<i>4</i>	<i>40,000</i>	<i>55,000</i>
<i>5</i>	<i>40,000</i>	<i>60,000</i>

Bagi setiap projek di atas, kirakan:

- i. Tempoh bayaran balik
- ii. Nilai kini bersih

[10 markah]

- CLO1 (c) Berdasarkan jawapan anda di (b), tentukan projek mana yang perlu dipilih dan berikan alasan.

[5 markah]

QUESTION 4

CLO1 (a) Define fixed cost and variable cost. [5 marks]

CLO1 (b) Leverage refers to the extent to which a company uses debt to support the company's resources and operations.

(i) Explain **THREE (3)** types of leverage. [6 marks]

(ii) Discuss business risk and financial risk. [4 marks]

CLO1 (c) A financial analyst has collected financial information of Tropika Bhd for the year ended 31 December 2022.

Sales	RM40,000,000
Fixed cost	RM4,000,000
Variable cost	RM18,500,000
Interest expenses	RM2,700,000
Company tax rate	28%

Based on the information given above, calculate:

(i) Degree of Operating Leverage (DOL)

(ii) Degree of Financial Leverage (DFL)

(iii) Degree of Combine Leverage (DCL)

[10 marks]

SOALAN 4

CLO1 (a) Berikan definisi kos tetap dan kos berubah. [5 markah]

CLO1 (b) Leverage merujuk kepada sejauh mana syarikat menggunakan hutang untuk menampung sumber dan operasi syarikat.

(i) Terangkan **TIGA (3)** jenis leverage. [6 markah]

(ii) Bincangkan risiko perniagaan dan risiko kewangan. [4 markah]

CLO1 (c) Seorang penganalisis kewangan telah mengumpul maklumat kewangan bagi Tropika Bhd bagi tahun berakhir 31 Disember 2022.

Jualan	RM40,000,000
Kos tetap	RM4,000,000
Kos berubah	RM18,500,000
Belanja faedah	RM2,700,000
Kadar cukai syarikat	28%

Berdasarkan maklumat yang diberikan di atas, kira:

- (i) Darjah Leverage Operasi (DLO)
- (ii) Darjah Leverage Kewangan (DLK)
- (iii) Darjah Leverage Gabungan (DLG)

[10 markah]

SOALAN TAMAT

FORMULA

Operating Cycle = Average age of inventory (AAI) + Average collection period (ACP)

Total carrying cost (TCC) = (inventory average) (carrying cost per unit)
 $= (Q/2) C$

Total ordering cost (TOC) = (times order is made) (each order cost)
 $= (S/Q) O$

Total inventory cost (TIC) = TCC + TOC
 $= (Q/2) C + (S/Q) O$

$$EOQ = \sqrt{\frac{2(S)(O)}{C}}$$

Inventory average = $(EOQ/2) + \text{safety stock}$

Number of annual order = annual requirement / each order quantity (EOQ)

Total inventory cost = Total Carrying Cost (TCC) + Total Ordering Cost (TOC)
 $= ((Q/2) + \text{safety stock}) C + (S/Q) O$

Surrendered discount annual cost =
 (Credit effective cost) $\frac{a}{1-a} \times \frac{360}{c-b}$

Interest = Principal (P) X Rate (R) X Time (T)

Annual effective rate = $\frac{\text{Interest}}{\text{Principal}} \times \frac{1}{\text{Time}}$

Annual effective rate (Discounted) = $\frac{\text{Interest}}{\text{Principal} - \text{Interest}} \times \frac{1}{\text{Time}}$

Effective cost of Interest = $\frac{(\text{Interest} + \text{Fees})}{(\text{Principal} - \text{Interest} - \text{Fees})} \times \frac{1}{\text{Time}}$

$V_b = I (PVIFA i, n) + M (PVIF i, n)$

$V_b = I (PVIFA i/m, mn) + M (PVIF i/m, mn)$

$V_{ps} = \frac{D}{R_{ps}}$, $R_{ps} = \frac{D}{V_{ps}}$, $V_{cs} = \frac{D1}{1 + R_{cs}} + \frac{P1}{1 + R_{cs}}$, $V_{cs} = \frac{D}{R_{cs}}$, $V_{cs} = \frac{D1}{R_{cs} - g}$, $D1 = D_0 (1+g)$

Annual Depreciation = $\frac{\text{Cost of depreciable assets} - \text{Scrap Value}}{\text{Asset life}}$

PP = Initial outlay / ACF average

NPV = $(ACF_t \times PVIFA k, n) - IO$

$IRR = IO = \frac{ACF_t}{\sum (1 + IRR)^t}$	$PI = \frac{ACF_t}{\sum (1 + k)^t}$
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$(P \times Q) - [(V \times Q) + F] = EBIT = 0$

BEP (unit), $Q = \frac{F}{P - V}$, BEP (\$) = BEP (unit) x sales price

BEP (\$), $*S = \frac{F}{1 - \frac{V}{S}}$, BEP (unit) = BEP (\$) / Sales price per unit

DOL (\$) = $(S - VQ) / (S - VQ - F)$

DFL (\$) = $(S - VQ - FC) / (S - VQ - FC - I - [PD \times 1 / (1 - T)])$

DCL = DOL x DFL

DCL (\$) = $(S - VQ) / (S - VQ - FC - I - [PD / (1 - T)])$

Present Value and Future Value Tables

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	2.1718	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	3.3948	3.7072	4.0456	4.4114	6.1917	8.5944	9.3132	13.788
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	11.842	17.922
12	1.1268	1.2682	1.4258	1.6010	1.7959	2.0122	2.2522	2.5182	2.8127	3.1384	3.4955	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	2.5785	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	1.6528	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	2.1068	2.5270	3.0256	3.6185	4.3157	5.1417	6.1159	7.2633	8.6128	10.197	12.056	14.232	16.777	31.948	59.588	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	38.336	73.864	86.736	190.050
21	1.2324	1.5157	1.8603	2.2788	2.7860	3.3966	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	5.4385	6.6586	8.1403	9.9336	12.100	14.714	17.881	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	20.382	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	95.386	218.542	264.898	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	14.785	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	15.988	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	267.864	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	450.738	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	5.7556	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	14.660	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	18.599	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	21.782	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	173.836	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	115.360	186.688	303.601	342.945	630.165
21	23.239	25.783	28.676	31.969	35.719	39.993	44.885	50.423	56.785	64.002	72.265	81.899	92.470	104.768	118.810	134.841	225.028	377.485	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	469.506	536.101	*
23	25.718	28.845	32.453	36.818	41.430	46.996	53.636	60.893	69.532	79.543	91.148	104.603	120.205	138.297	159.278	183.601	326.237	592.830	673.628	*
24	26.973	30.422	34.426	39.093	44.502	50.816	58.177	66.785	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	471.961	898.092	*	*
30	34.785	40.588	47.675	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	41.680	49.994	60.462	73.852	90.320	111.435	138.237	172.317	215.711	271.024	341.590	431.663	546.861	693.573	881.170	*	*	*	*	*
36	43.077	51.994	63.276	77.598	95.836	119.121	148.913	187.102	236.125	299.127	380.164	484.465	618.749	791.673	*	*	*	*	*	*
40	48.886	60.402	75.401	95.026	120.890	154.362	199.635	250.057	337.882	442.593	581.828	767.091	*	*	*	*	*	*	*	*
50	64.643	84.579	112.797	152.667	209.348	290.336	406.523	573.770	815.084	*	*	*	*	*	*	*	*	*	*	*

Present Value and Future Value Tables

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%	17%	18%	19%	20%	21%	22%	23%	24%	25%	26%	27%	28%	29%	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	0.8548	0.8476	0.8405	0.8333	0.8263	0.8193	0.8124	0.8055	0.7987	0.7919	0.7852	0.7785	0.7718	0.7652
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	0.7303	0.7176	0.7050	0.6926	0.6803	0.6681	0.6561	0.6441	0.6322	0.6204	0.6087	0.5971	0.5856	0.5741
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	0.6245	0.6087	0.5933	0.5783	0.5636	0.5491	0.5348	0.5207	0.5068	0.4931	0.4796	0.4663	0.4531	0.4401
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	0.5332	0.5143	0.4956	0.4772	0.4590	0.4410	0.4232	0.4056	0.3882	0.3710	0.3540	0.3372	0.3206	0.3042
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	0.4551	0.4343	0.4137	0.3933	0.3731	0.3531	0.3333	0.3137	0.2942	0.2749	0.2558	0.2368	0.2180	0.2000
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	0.3896	0.3690	0.3486	0.3284	0.3084	0.2886	0.2690	0.2496	0.2303	0.2111	0.1921	0.1732	0.1545	0.1360
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	0.3321	0.3106	0.2893	0.2682	0.2473	0.2266	0.2061	0.1858	0.1656	0.1456	0.1258	0.1061	0.0866	0.0672
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	0.2836	0.2624	0.2414	0.2206	0.1999	0.1794	0.1591	0.1389	0.1188	0.0988	0.0789	0.0591	0.0394	0.0200
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	0.2420	0.2212	0.2006	0.1801	0.1597	0.1394	0.1191	0.0989	0.0788	0.0588	0.0389	0.0191	0.0000	0.0000
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	0.2948	0.2697	0.2472	0.2262	0.2054	0.1848	0.1643	0.1439	0.1236	0.1033	0.0831	0.0630	0.0430	0.0231	0.0032	0.0000	0.0000	0.0000
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	0.2368	0.2149	0.1954	0.1761	0.1569	0.1378	0.1187	0.0997	0.0807	0.0617	0.0428	0.0239	0.0049	0.0000	0.0000	0.0000	0.0000
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	0.1502	0.1320	0.1138	0.0956	0.0774	0.0592	0.0410	0.0228	0.0046	0.0000	0.0000	0.0000	0.0000	0.0000
13	0.8787	0.7730	0.6810	0.6008	0.5303	0.4688	0.4150	0.3677	0.3262	0.2897	0.2575	0.2292	0.2042	0.1821	0.1625	0.1442	0.1260	0.1078	0.0896	0.0714	0.0532	0.0350	0.0168	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.1091	0.0930	0.0769	0.0608	0.0447	0.0286	0.0125	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0928	0.0777	0.0626	0.0475	0.0324	0.0173	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0791	0.0651	0.0511	0.0371	0.0231	0.0091	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0685	0.0568	0.0451	0.0334	0.0217	0.0099	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0584	0.0477	0.0369	0.0261	0.0153	0.0045	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0499	0.0402	0.0305	0.0208	0.0111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0427	0.0339	0.0251	0.0163	0.0075	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0444	0.0356	0.0268	0.0180	0.0092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0374	0.0286	0.0198	0.0110	0.0022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0251	0.0173	0.0095	0.0017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0216	0.0148	0.0079	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0185	0.0125	0.0065	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0084	0.0052	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0035	0.0015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
40	0.6717	0.4529	0.3066	0.2083	0.1420	0.0972	0.0688	0.0460	0.0318	0.0221	0.0154	0.0107	0.0075	0.0053	0.0037	0.0022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0004	0.0002	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.8085	0.8000	0.7692
2	1.9704	1.9418	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	2.2469	2.1065	1.9813	1.9520	1.8181
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	5.5349	5.3349	5.1461	4.9676	4.7988	4.6399	4.4873	4.3436	3.8372	3.4212	3.3269	2.9247
9	8.5660	8.1622	7.7861	7.4337	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	5.4282	5.2161	5.0188	4.8332	4.1925	3.6819	3.5705	3.0915
11	10.368	9.7968	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	5.9178	5.6603	5.4268	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	7.3687	6.9819	6.6282	6.3025	6.0241	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	13.366	12.468	11.624	10.877	9.7632	9.1216	8.5436	8.0216	7.5488	7.1198	6.7291	6.3729	6.0472	5.7487	4.7746	4.0591	3.9099	3.2948
18	16.398	14.992	13.754	12.859	11.890	10.828	10.059	9.3719	8.7556	8.2014	7.7016	7.2497	6.8399	6.4674	6.1280	5.8187	4.8122	4.0799	3.9279	3.3037
19	17.226	15.678	14.324	13.334	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	18.048	16.351	14.877	13.590	12.482	11.470	10.594	9.8181	9.1285	8.5136	7.9633	7.4684	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	7.5820	7.1016	6.8870	6.5125	6.1731	4.8913	4.1212	3.9631	3.3198
22	19.660	17.658	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	4.8094	4.1300	3.9705	3.3230
23	20.458	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	3.9784	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	19.800	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	18.865	16.374	14.498	12.948	11.655	10.567	9.6442	8.8552	8.1755	7.5858	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	11.747	10.612	9.6765	8.8786	8.1924	7.5978	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	15.048	13.332	11.925	10.757	9.7791	8.9511	8.2438	7.6344	7.1050	6.6418	6.2335	4.9986	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