
UNIVERSITI SAINS MALAYSIA

Kolej Pengurusan Astin

Peperiksaan Semester Kedua
Sidang Akademik 2007/2008
April 2008

**Program Ijazah Luaran
Ijazah Sarjana Muda Pengurusan (Kepujian)**

**ATW261 - Prinsip Kewangan
[Principles of Finance]**

Masa: 3 jam
[Duration: 3 hours]

Sila pastikan bahawa kertas peperiksaan ini mengandungi **SEBELAS** muka surat yang bercetak sebelum anda memulakan peperiksaan ini.

*[Please check that this examination paper consists of **ELEVEN** pages of printed material before you begin the examination.]*

Arahan: Jawab **EMPAT (4)** soalan.

[Instructions: Answer **FOUR (4)** questions.]

Soalan 1/Question 1

- (a) Pulangan atas ekuiti Koplas Packaging pada tahun lalu hanya sebanyak 3 peratus. Namun, pihak pengurusan telah membangunkan pelan operasi untuk memperbaiki keadaan. Pelan berkenaan memerlukan nisbah hutang sebanyak 60 peratus yang mengakibatkan caj faedah sebanyak RM3000 setahun. Pihak pengurusan meramalkan pendapatan sebelum faedah dan cukai sebanyak RM10,000 berdasarkan jualan sebanyak RM100,000. Adalah dijangkakan pusing ganti jumlah aset syarikat ialah sebanyak 2.0. Di dalam keadaan di atas, kadar cukai yang dikenakan ialah sebanyak 30 peratus. Sekiranya perubahan tersebut dilakukan;

Koplas Packaging's Return on Equity (ROE) last year was only 3 percent, but its management has developed a new operating plan designed to improved things. The new plan calls for a total debt ratio of 60 percent, which will result in interest charges of RM3000 per year. Management projects an earnings before interest and taxes (EBIT) of RM10, 000 on sales of RM100,000 and it expects to have a total assets turnover ratio of 2.0. Under these conditions, the average tax rate will be 30 percent. If the changes are made;

- (i) Berapakah pulangan atas ekuiti yang diperolehi oleh Koplas?

What return on equity will Koplas earn?

[8 markah/marks]

- (ii) Berapakah pulangan atas aset?

What is the Return on Assets (ROA)?

[4 markah/marks]

- (b) Untuk membantu rancangan persaraannya dalam tempoh genap 42 tahun, Ghazz menganggarkan bahawa dia perlu mengumpul sebanyak RM220,000 pada penghujung tempoh 42 tahun dari sekarang. Beliau merancang untuk menyimpan sejumlah wang dengan amaun yang sama pada setiap hujung tahun di dalam simpanan yang menawarkan kadar faedah 8 peratus setahun.

To supplement his planned retirement in exactly 42 years, Ghazz estimate that he needs to accumulate RM220, 000 by the end of 42 years from today. He plans to make equal, annual, end-of-year deposits into an account paying 8% annual interest.

- (i) Berapakah amaun simpanan tahunan yang diperlukan untuk mengumpul sejumlah RM220,000 pada penghujung tempoh 42 tahun berkenaan.

How large must the annual deposits be to create the RM220, 000 fund by the end of 42 years?

[4 markah/marks]

- (ii) Sekiranya beliau mampu menyimpan sebanyak RM600 setahun, berapakah jumlah wang yang terkumpul pada penghujung tempoh 42 tahun berkenaan?

If he can afford to deposit only RM600 per year into the account, how much will he accumulate by the end of the 42 years?

[4 markah/marks]

- (c) Briefly explain how does financial decisions affect shareholders wealth.

Terangkan secara ringkas tentang bagaimana keputusan-keputusan kewangan mempengaruhi kekayaan pemegang saham.

[5 markah/marks]

Soalan 2/Question 2

- (a) Zairiene memiliki portfolio saham yang megandung pelaburan seimbang di dalam aset bebas risiko dan dua saham berlainan. Sekiranya saham yang pertama mempunyai beta sebanyak 1.75 dan portfolio berkenaan mempunyai risiko yang sama dengan pasaran, berapakah beta untuk satu lagi saham dalam portfolio beliau.

Zairiene own a stock portfolio which equally invested in a risk-free asset and two stocks. If one of the stocks has a beta of 1.75 and the total portfolio is equally as risky as the market, what must the beta be for the other stock in her portfolio?

[6 markah/marks]

- (b) Anda memiliki potfolio yang terdiri dari saham-saham berikut:

You own a portfolio consisting of the following stocks:

Saham/ Stock	Peratus di dalam Portfolio/ Percentage of Portfolio	Beta	Pulangan Dijangka/ Expected Return (%)
1	15	1.25	12
2	20	1.05	11
3	35	0.75	9
4	30	1.60	14

Kadar bebas risiko ialah sebanyak 7.5 peratus manakala pulangan dijangka untuk potfolio pasaran ialah 11.5 peratus.

The risk free rate is 7.5 percent. Also, the expected return on the market portfolio is 11.5 percent.

- (i) Kira pulangan dijangka untuk portfolio anda.
Calculate the expected return of your portfolio. [3 markah/marks]
- (ii) Kira beta untuk portfolio tersebut.
Calculate the portfolio beta [3 markah/marks]
- (iii) Berdasarkan maklumat yang telah anda kira, lakar garis pasaran sekuriti. Lakarkan saham-saham di dalam portfolio anda di atas graf berkenaan.
Given the preceding information, plot the security market line. Plot the stocks from your portfolio on your graph. [5 markah/marks]
- (iv) Berdasarkan lakaran di bahagian (iii), saham yang manakah memberikan keuntungan dan kerugian?
From your plot in part (iii), which stock appear to be your winners and which one to be losers? [3 markah/marks]
- (c) Terangkan kenyataan berikut: “Pemegangan saham sebagai sebahagian dari portfolio umumnya kurang berisiko berbanding pemegangan saham secara individu”.
Explain the following statement: “A stock held as part of a portfolio is generally less risky than the same stock held in isolation” [5 markah/marks]

Soalan 3/Question 3

- (a) Kruz Krooz Bhd. menerbitkan saham keutamaan dengan menawarkan dividen tahunan sebanyak RM 8 yang dibayar secara berterusan.
Kruz Krooz Bhd. has issued preferred stock with RM 8 annual dividend that will be paid in perpetuity.
- (i) Sekiranya kadar diskaun ialah sebanyak 12 peratus, berapakah harga jualan saham berkenaan?
If the discount rate is 12 percent, at what price should the preferred sell? [3 markah/marks]

- (ii) Berapakah harga jualan saham berkenaan setahun dari sekarang?

At what price should the stock sell 1 year from now?

[3 markah/marks]

- (iii) Berapakah kadar pulangan dijangka saham tersebut?

What is the expected rate of return of the stock?

[3 markah/marks]

- (iv) Andaikan kadar pulangan yang anda perlukan sebanyak 14 peratus, adakah anda patut membeli saham ini?

Assume that you have a required rate of return of 14 percent, should you purchase the stock?

[2 markah/marks]

- (b) Saham biasa McCracker Berhad menghasilkan dividen sebanyak RM1.20 sesaham pada tahun lepas Syarikat menjangkakan pertumbuhan pendapatan dan dividen berterusan pada kadar 5 peratus setahun.

McCracker Berhad common stock paid a dividend of RM1.20 per share last year. The company expects earnings and dividend growth at a rate of 5 percent per year for the foreseeable future.

- (i) Berapakah kadar pulangan yang diperlukan untuk membolehkan harga seunit saham ini menjadi RM28?

What required rate of return for this stock would result in a price per share of RM28?

[3 markah/marks]

- (ii) Sekiranya McCracker menjangka pendapatan dan dividen bertumbuh pada kadar 10 peratus setahun, apakah kadar pulangan yang diperlukan bagi membolehkan harga seunit saham menjadi RM28.

If McCracker expects both earnings and dividends to grow at an annual rate of 10 percent, what required rate of return would result in a price of RM28.

[3 markah/marks]

- (iii) Sekiranya peserta pasaran membuat tanggapan bahawa risiko firma akan meningkat dan menyebabkan kadar pulangan yang diperlukan meningkat kepada 20 peratus, berapakah nilai saham biasa berkenaan?

If the firm's risk as perceived by market participations suddenly increases, causing the required rate of return to rise to 20 percent, what will be the common stock value?

[3 markah/marks]

- (c) Bon bagi Air Express Corporation mempunyai nilai par RM1,000 dan membayar faedah 5 peratus setahun serta memiliki tempoh sehingga matang selama 12 tahun. Anda boleh membeli bon berkenaan pada harga RM915.

Air Express Corporation's RM1,000 bonds pay 5 percent interest annually and have 12 years until maturity. You can purchase the bond for RM915.

- (i) Berapakah pulangan dijangka yang boleh anda perolehi dari bon ini?

What return do you expect to earn on this bond?

[3 markah/marks]

- (ii) Adakah anda akan membeli bon berkenaan sekiranya kadar pulangan yang anda perlukan ialah sebanyak 9 peratus?

Should you purchase the bond if your required rate of return is 9 percent?

[2 markah/marks]

Soalan 4/Question 4

- (a) Kitchenware Shoppe sedang menimbang satu projek baru bagi melengkapi perniagaan sedia ada. Mesin yang diperlukan untuk projek tersebut berharga RM20 juta. Jabatan Pemasaran syarikat menjangkakan jualan dari projek berkenaan sebanyak RM1.2 juta setahun selama empat tahun dan projek tersebut berakhir selepas tempoh tersebut. Mesin itu akan disusutnilai sehingga sifar selama empat tahun iaitu jangka hayat penggunaannya dengan kaedah garis lurus. Kos barang dijual dan perbelanjaan operasi berkaitan dengan projek ini dianggarkan sebanyak 25 peratus dari jumlah jualan. Kitchenware juga perlu menambah segera modal kerja bersih sebanyak RM100,000. Tambahan modal kerja tersebut akan diperolehi semula sepenuhnya pada akhir tempoh projek. Cukai korporat yang dikenakan ialah sebanyak 35 peratus manakala kadar pulangan yang diperlukan oleh Kitchenware ialah sebanyak 14 peratus.

Kitchenware Shoppe is considering a new project that complements its existing business. The machine require for the project costs RM20 million. The marketing department predicts that sales related to the project will be RM1.2 million for the next four years, after which the market will cease to exist. The machine will be depreciated down to zero over its four-year economic life using the straight-line method. Costs of good sold and operating expenses related to the project are predicted to be 25 percent of sales. Kitchenware also needs to add net working capital of RM100,000 immediately. The additional working capital will be recovered in full at the end of the project's life. The corporate tax rate is 35 percent. The required rate of return for Kitchenware is 14 percent.

Adakah Kitchenware perlu meneruskan projek ini?

Should Kitchenware proceed with project?

[14 markah/marks]

- (b) Kos ekuiti untuk Air Roll Company ialah sebanyak 16 peratus, kos hutang sebelum cukai sebanyak 13 peratus manakala cukai korporat dikenakan pada kadar 40 peratus. Dengan menggunakan kunci kira-kira dibawah, kira kos modal purata berwajaran selepas cukai bagi Air Roll Company.

ASET (RM Ribu)		LIABILITI DAN EKUITI (RM Ribu)	
Tunai	RM120	Hutang Jangka Panjang	RM1152
Akaun Belum Bayar	240	Ekuiti	1728
Inventori	360		
Loji dan Mesin Bersih	2160		
Jumlah Aset	2880	Total Liabiliti dan Ekuiti	2880

The Air Roll Company's cost of equity is 16 percent. Its before tax cost of debt is 13 percent, and its tax rate is 40 percent. Using the following balance sheet, calculate Air Roll's after-tax weighted average cost of capital:

ASSETS (RM thousands)		LIABILITIES AND EQUITY (RM thousands)	
Cash	RM120	Long-term debt	RM1152
Accounts Receivable	240	Equity	1728
Inventories	360		
Net Plant and equipment	2160		
Total Assets	2880	Total Liabilities and Equity	2880

[6 markah/marks]

- (c) Apakah perbezaan di antara dividen saham dan pecahan saham? Sebagai pemilik saham, adakah anda berminat dengan perisytiharan syarikat untuk dividen saham 100 peratus atau pecahan saham dua untuk satu? Andaikan kedua-dua tindakan boleh dilaksanakan.

What is the difference between a stock dividend and stock split? As a stockholder, would you prefer to see your company declare a 100 percent stock dividend or a 2-for-1 split? Assume that either action is feasible.

[5 markah/marks]

Soalan 5/Question 5

- (a) Railway Man Company sedang menimbang dua projek yang saling menyingkiri di mana kos dan aliran tunai ditunjukkan di dalam jadual di bawah:

Railway Man Company is considering two mutually exclusive projects whose costs and cash flows are shown in the following table:

Tahun/ Year	Projek Alpha Project Alpha (RM juta/ RM thousands)	Projek Beta Project Beta (RM juta/ RM thousands)
0	(2500)	(2500)
1	2000	0
2	900	1800
3	100	1000
4	100	900

Kedua-dua projek mempunyai risiko yang setara dengan kadar pulangan yang diinginkan oleh syarikat sebanyak 14 peratus. Sebagai Ketua Pegawai Kewangan, anda dikehendaki mencadangkan projek yang perlu dipilih. Untuk menentukan pilihan yang sesuai, kira nilai kini bersih (NPV) dan kadar pulangan dalaman (IRR) kedua-dua projek.

The projects are equally risky and the company's required rate of return is 14 percent. As a Chief financial Officer, you must make a recommendation concerning which project should be purchased. To determine which is more appropriate, compute the Net present Value (NPV) and Internal Rate of Return (IRR) of the project.

[13 markah/marks]

- (b) Penyata Pendapatan Lumber Creator untuk tahun 2007 adalah seperti berikut:

LUMBER CREATOR
PENYATA PENDAPATAN PADA TEMPOH BERAKHIR 31
DISEMBER, 2007 (RM RIBU)

Jualan	36,000
Kos Barang Dijual	<u>(25,200)</u>
Untung Kasar	10,800
Belanja Operasi Tetap	<u>(6,480)</u>
Pendapatan Sebelum Faedah dan Cukai	4,320
Faedah	<u>(2,880)</u>
Pendapatan Sebelum Cukai	1,440
Cukai (40%)	<u>(576)</u>
Pendapatan Bersih	864
Dividen (50%)	432

Lumber Creator's 2007 income statement is shown here:

LUMBER CREATOR
INCOME STATEMENT FOR DECEMBER 31, 2007
(RM THOUSANDS)

<i>Sales</i>	36,000
<i>Cost of goods sold</i>	<u>(25,200)</u>
<i>Gross Profit</i>	10,800
<i>Fixed Operating Costs</i>	<u>(6,480)</u>
<i>Earnings before interest and taxes</i>	4,320
<i>Interest</i>	<u>(2,880)</u>
<i>Earnings Before Tax</i>	1,440
<i>Taxes (40%)</i>	<u>(576)</u>
<i>Net Income</i>	864
<i>Dividend (50%)</i>	432

- (i) Kira tahap keumpulan operasi (DOL), tahap keumpulan kewangan (DFL) dan tahap keumpulan gabungan (DCL) untuk Lumber Creator.

Compute the degree of operating leverage (DOL), degree of financial leverage (DFL) and degree of combined leverage (DCL) for Lumber Creator.

[9 markah/marks]

- (ii) Tafsirkan maksud setiap nilai tahap keumpulan yang anda kira dalam bahagian (i).

Interpret the meaning of each of the numerical values you computed in part (i).

[3 markah/marks]

TABLE I

Future Value Interest Factor (FVIF) (\$1 at *i%* for *n* years);

$FVIF = (1 + i)^n$; $FV_n = PV_0(FVIF_{i,n})$

PERIOD, <i>n</i>	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	24%	28%	32%	36%	40%
0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1	1.010	1.020	1.030	1.040	1.050	1.060	1.070	1.080	1.090	1.100	1.110	1.120	1.130	1.140	1.150	1.160	1.170	1.180	1.190	1.200	1.240	1.280	1.320	1.360	1.400
2	1.020	1.040	1.061	1.082	1.102	1.124	1.145	1.166	1.188	1.210	1.232	1.254	1.277	1.300	1.322	1.346	1.369	1.392	1.416	1.440	1.538	1.638	1.742	1.850	1.960
3	1.030	1.061	1.093	1.125	1.158	1.191	1.225	1.260	1.295	1.331	1.368	1.405	1.443	1.482	1.521	1.561	1.602	1.643	1.685	1.728	1.907	2.067	2.200	2.515	2.744
4	1.041	1.082	1.126	1.170	1.216	1.262	1.311	1.360	1.412	1.464	1.518	1.574	1.630	1.689	1.749	1.811	1.874	1.939	2.005	2.074	2.364	2.684	3.036	3.421	3.842
5	1.051	1.104	1.159	1.217	1.276	1.338	1.403	1.469	1.539	1.611	1.685	1.762	1.842	1.925	2.011	2.100	2.192	2.288	2.386	2.488	2.932	3.436	4.007	4.653	5.378
6	1.062	1.126	1.194	1.265	1.340	1.419	1.501	1.587	1.677	1.772	1.870	1.974	2.082	2.195	2.313	2.436	2.565	2.700	2.840	2.986	3.635	4.398	5.290	6.328	7.530
7	1.072	1.149	1.230	1.316	1.407	1.504	1.606	1.714	1.828	1.949	2.076	2.211	2.353	2.502	2.659	2.826	3.001	3.185	3.379	3.583	4.508	5.629	6.983	8.605	10.541
8	1.083	1.172	1.267	1.369	1.477	1.594	1.718	1.851	1.993	2.144	2.305	2.476	2.658	2.853	3.059	3.278	3.511	3.759	4.021	4.300	5.590	7.206	9.217	11.708	14.758
9	1.094	1.195	1.305	1.423	1.551	1.689	1.838	1.999	2.172	2.358	2.558	2.773	3.004	3.252	3.518	3.803	4.108	4.435	4.785	5.160	6.931	9.223	12.166	15.917	20.661
10	1.105	1.219	1.344	1.480	1.629	1.791	1.967	2.159	2.367	2.594	2.839	3.106	3.395	3.707	4.046	4.411	4.807	5.234	5.695	6.192	8.594	11.806	16.060	21.647	28.925
11	1.116	1.243	1.384	1.539	1.710	1.898	2.105	2.332	2.580	2.853	3.152	3.479	3.836	4.226	4.652	5.117	5.624	6.176	6.777	7.430	10.657	15.112	21.199	29.439	40.496
12	1.127	1.268	1.426	1.601	1.796	2.012	2.252	2.518	2.813	3.138	3.498	3.896	4.335	4.818	5.350	5.926	6.580	7.288	8.064	8.916	13.215	19.343	27.983	40.037	56.694
13	1.138	1.294	1.469	1.665	1.886	2.133	2.410	2.720	3.066	3.452	3.883	4.363	4.898	5.492	6.153	6.886	7.699	8.599	9.596	10.699	16.386	24.759	36.937	54.451	79.372
14	1.149	1.319	1.513	1.732	1.980	2.261	2.579	2.937	3.342	3.797	4.310	4.887	5.535	6.261	7.076	7.988	9.007	10.147	11.420	12.899	20.319	31.961	48.757	74.053	111.120
15	1.161	1.346	1.558	1.801	2.079	2.397	2.759	3.172	3.642	4.177	4.785	5.474	6.254	7.138	8.137	9.266	10.539	11.974	13.590	15.407	25.196	40.565	64.359	100.712	155.568
16	1.173	1.373	1.605	1.873	2.183	2.540	2.952	3.426	3.970	4.595	5.311	6.130	7.067	8.137	9.358	10.748	12.330	14.129	16.172	18.488	31.243	51.923	84.954	136.969	217.795
17	1.184	1.400	1.653	1.948	2.292	2.693	3.159	3.700	4.328	5.054	5.895	6.866	7.986	9.276	10.761	12.468	14.426	16.672	19.244	22.186	38.741	66.461	112.139	186.278	304.914
18	1.196	1.428	1.702	2.026	2.407	2.854	3.380	3.996	4.717	5.560	6.544	7.690	9.024	10.575	12.375	14.463	16.879	19.673	22.901	26.623	48.039	85.071	148.023	253.338	426.879
19	1.208	1.457	1.754	2.107	2.527	3.026	3.617	4.316	5.142	6.116	7.263	8.613	10.197	12.056	14.232	16.777	19.748	23.214	27.252	31.948	59.568	108.890	195.391	344.540	597.630
20	1.220	1.486	1.806	2.191	2.653	3.207	3.870	4.661	5.604	6.728	8.062	9.646	11.523	13.743	16.367	19.461	23.106	27.393	32.429	38.338	73.864	139.380	257.916	468.574	836.683
24	1.270	1.608	2.033	2.563	3.225	4.049	5.072	6.341	7.911	9.850	12.239	15.179	18.790	23.212	28.625	35.236	43.297	53.109	65.032	79.497	174.631	374.144	783.023	1,603.00	3,214.20
25	1.282	1.641	2.094	2.666	3.386	4.292	5.427	6.848	8.623	10.835	13.585	17.000	21.231	26.462	32.919	40.874	50.658	62.669	77.388	95.396	216.542	478.905	1,033.59	2,180.08	4,499.88
30	1.348	1.811	2.427	3.243	4.322	5.743	7.612	10.063	13.268	17.449	22.892	29.960	39.116	50.950	66.212	85.850	111.065	143.371	184.675	237.376	634.820	1,645.50	4,142.07	10,143.0	24,201.4
40	1.489	2.208	3.262	4.801	7.040	10.286	14.974	21.725	31.409	45.259	65.001	93.051	132.782	188.884	267.864	378.721	533.869	750.378	1,051.67	1,469.77	5,455.91	19,426.7	66,520.8	219,562	700,038
50	1.645	2.692	4.384	7.107	11.467	18.420	29.457	46.902	74.358	117.391	184.565	289.002	450.736	700.233	1,083.66	1,670.70	2,566.22	3,927.36	5,988.91	9,100.44	46,890.4	229,350	*	*	*
60	1.817	3.281	5.892	10.520	18.679	32.988	57.946	101.257	176.031	304.482	524.057	897.597	1,530.05	2,595.92	4,384.00	7,370.20	12,335.4	20,555.1	34,105.0	56,347.5	402.996	*	*	*	*

*These interest factors exceed 1,000,000

TABLE II

Present Value Interest Factor (PVIF) (\$1 at *i%* for *n* years); $PVIF = \frac{1}{(1 + i)^n}$; $PV_0 = FV_n(PVIF_{i,n})$

PERIOD, <i>n</i>	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	24%	28%	32%	36%	40%
0	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833	0.806	0.781	0.758	0.735	0.714
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826	0.812	0.797	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694	0.650	0.610	0.574	0.541	0.510
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751	0.731	0.712	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579	0.524	0.477	0.435	0.398	0.364
4	0.961	0.924	0.889	0.855	0.823	0.792	0.763	0.735	0.708	0.683	0.659	0.636	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482	0.423	0.373	0.329	0.292	0.260
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621	0.593	0.567	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402	0.341	0.291	0.250	0.215	0.186
6	0.942	0.888	0.838	0.790	0.746	0.705	0.666	0.630	0.596	0.564	0.535	0.507	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335	0.275	0.227	0.189	0.158	0.133
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513	0.482	0.452	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279	0.222	0.178	0.143	0.116	0.095
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467	0.434	0.404	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233	0.179	0.139	0.108	0.085	0.068
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424	0.391	0.361	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194	0.144	0.108	0.082	0.063	0.048
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386	0.352	0.322	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162	0.116	0.085	0.062	0.046	0.035
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350	0.317	0.287	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0.135	0.094	0.066	0.047	0.034	0.025
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319	0.286	0.257	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0.112	0.076	0.052	0.036	0.025	0.018
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290	0.258	0.229	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0.093	0.061	0.040	0.027	0.018	0.013
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263	0.232	0.205	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0.078	0.049	0.032	0.021	0.014	0.009
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239	0.209	0.183	0.160	0.140	0.123	0.108	0.095								

TABLE III

Future Value of an Annuity Interest Factor (FVIFA) (\$1 per year at *i*% for *n* years);

FVIFA = $\frac{(1 + i)^n - 1}{i}$; FVAN_n = PMT(FVIFA_{i,n})

Table with 25 columns for interest rates (1% to 40%) and 25 rows for periods (1 to 60). Values represent the Future Value of an Annuity Interest Factor (FVIFA) for each combination of period and rate. The table shows exponential growth as both period and rate increase.

*These interest factors exceed 1,000.000

TABLE IV

Present Value of an Annuity Interest Factor (PVIFA) (\$1 per year at *i*% for *n* years);

PVIFA = $\frac{1 - \frac{1}{(1 + i)^n}}{i}$; PVAN = PMT(PVIFA_{i,n})

Table with 25 columns for interest rates (1% to 40%) and 25 rows for periods (1 to 60). Values represent the Present Value of an Annuity Interest Factor (PVIFA) for each combination of period and rate. The table shows decreasing values as both period and rate increase.