



UNIVERSITI KUALA LUMPUR BUSINESS SCHOOL

FINAL EXAMINATION
JANUARY 2016 SEMESTER

COURSE CODE : EAB 21503
COURSE TITLE : PRINCIPLES OF FINANCE
COURSE LEVEL : BACHELOR
TIME : 2.00 PM - 5.00 PM
DURATION : 3 HOURS
DATE : 19th MAY 2016

INSTRUCTIONS TO CANDIDATES

1. Please read the instructions given in the question paper CAREFULLY.
2. This question paper is printed on both sides of the paper.
3. This question paper consists of **TWO (2)** section: **Section A and Section B**.
4. Answer **ALL** questions in Section A. For Section B, answer any **THREE (3)** questions.
5. Please write your answers on the 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.

THERE ARE SEVEN (7) PAGES OF QUESTIONS AND FOUR (4) PAGES OF APPENDICES, EXCLUDING THIS PAGE.

SECTION A (Total: 40 marks)

INSTRUCTION: Answer ALL questions

Please use the answer booklet provided.

Question 1

State the four steps to determining the price of a bond

(5 marks)

Question 2

When a company has excess funds, it has four options. Describe these options.

(8 marks)

Question 3

Finance functions in a two-parameter world of risk and return. Define risk and return in a financial sense and discuss how these two concepts are "joined at the hip."

(9 marks)

Question 4

Explain what is meant by cash conversion cycle? Explain three components in the cash conversion cycle.

(9 marks)

Question 5

Describe one advantage and one disadvantage that is unique for each of the following capital budgeting evaluation techniques:

- (a) Payback period
- (b) Net present value
- (c) Internal rate of return

(9 marks)

Total: 40 Marks

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SECTION B (Total: 60 marks)

INSTRUCTION: Answer any three (3) questions
Please use the answer booklet provided!

Question 1

Amelia is considering to buy the ordinary shares of Asset A or Asset B or Asset C. The possible returns for all the three assets next year are as follows:

State of Economy	Probability	Return on Asset A	Return on Asset B	Return on Asset C
Boom	.35	0.040	0.210	0.300
Normal	.50	0.040	0.080	0.200
Recession	.15	0.040	-0.010	-0.260

REQUIRED:

- (a) Calculate the expected return of each asset? (7 marks)
- (b) Calculate the variance of each asset? (8 marks)
- (c) Calculate the standard deviation of each asset? (2 marks)
- (d) Which asset would Amelia choose? Why? (3 marks)

Total: 20 Marks

Question 2

Sierramas Sdn Bhd is considering three mutually exclusive projects. The initial outlays and after-tax cash flows of the three projects are given as below:

Year/ Initial Outlay	Project A RM (270 000)	Project B RM (280 000)	Project C RM (290 000)
1	55 000	80 000	0
2	65 000	80 000	0
3	75 000	80 000	0
4	85 000	80 000	0
5	90 000	80 000	415 000

The firm's cost of capital is 12%.

Required:

- (a) Calculate the payback period for each of the project. (3 marks)
- (b) Calculate the net present value (NPV) for each of the project. (10 marks)
- (c) Calculate the internal rate of return (IRR) for project B. (5 marks)
- (d) Which project would you choose? Why? (2 marks)

Total: 20 Marks

Question 3

Throneterra Sdn Bhd is having problem with its furnace system during operations. As a solution, the company is planning to replace the furnace coil which would cost RM 1,800,000. Miss. Sarra, the vice president of finance, has asked you to calculate the firm's cost of capital to be used in the capital budgeting decision.

For this reason, the firm can:

- i. issue common stocks for RM5.50 per share before underwriting costs of RM1.10 per share. The dividend paid last year was RM1.25 per share and is expected to grow at a constant rate of 6% a year.
- ii. issue 12% preferred stock, for RM110; net RM98. The par value of the preferred stock is RM100.
- iii. sell RM1,000 par value bonds with 11% annual coupon rate and 10 years maturity. The bonds can be sold for RM 860 each and floatation costs of 1% of the par value will be incurred. The bonds will mature at RM1020 each and the firm's tax rate is 28%.
- iv. The firm's capital structure which is considered optimal is as follows:

Common Stock	RM 6,000,000
Retained Earnings	RM 600,000
Preferred stock	RM 3,000,000
Debentures	RM 2,400,000

REQUIRED:

- a) Calculate the component cost of capital for:
 - i. new debt
 - ii. new preferred stock
 - iii. internal equity
 - iv. new common stock

(14 marks)

b) Determine the maximum amount of capital expenditure that the company can undertake without issuing new common stock. (3 marks)

c) Calculate the weighted average cost of capital (3 marks)

Total: 20 Marks

Question 4

Wonderful Plastics Sdn. Bhd. is a company that manufactures plastic goods. Below are the selected income statement and balance sheet items, for the year 2015:

Wonderful Plastics Sdn. Bhd.
Selected Income Statement Items, 2015

Cash Sales	RM 1,500,000
Credit Sales	<u>RM 7,500,000</u>
Total Sales	RM 9,000,000
COGS	RM 6,000,000

Wonderful Plastics Sdn. Bhd.
Selected Balance Sheet Accounts, 2015

	<u>12/31/2015</u>	<u>12/31/2014</u>	<u>Change</u>
Accounts Receivable	RM 270,000	RM 240,000	RM 30,000
Inventory	RM 125,000	RM 100,000	RM 25,000
Accounts Payable	RM 110,000	RM 90,000	RM 20,000

Using the information provided above and assuming that there are 365 days in a year, calculate the:

- (a) Average inventory for the year (4 marks)
- (b) Inventory turnover (3 marks)
- (c) Average production cycle (3 marks)
- (d) Average accounts receivable (4 marks)
- (e) Accounts receivable turnover (3 marks)
- (f) Collection cycle (3 marks)

Total 20 Marks

END OF QUESTION PAPER

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ATTACHMENT A

Financial Schedule for Future Value Interest Factor $[FV_n = PV_0 (FVIF_{i,n})]$

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Period n	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	1.165	1.186	1.210	1.232	1.245	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	1.967	2.300	2.515	2.744	3.000
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	1.748	1.811	1.874	1.939	2.005	2.074	2.364	2.808	3.211	3.642	4.100
5	1.051	1.104	1.159	1.217	1.278	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	2.388	2.488	2.932	3.436	3.938	4.500	5.100
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	2.985	3.635	4.398	5.200	6.050	7.000
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	2.660	2.826	3.001	3.185	3.379	3.583	4.508	5.628	6.983	8.605	10.400
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	2.850	3.059	3.278	3.511	3.759	4.021	4.300	5.590	7.208	9.217	11.703	14.758
9	1.094	1.195	1.305	1.423	1.551	1.689	1.838	1.999	2.172	2.358	2.556	2.773	3.004	3.252	3.519	3.803	4.106	4.435	4.789	5.160	6.894	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	4.044	4.407	4.807	5.234	5.689	6.162	8.594	11.806	16.060	21.647	28.925
11	1.116	1.243	1.375	1.520	1.679	1.851	2.038	2.241	2.461	2.700	2.958	3.237	3.538	3.863	4.213	4.589	4.994	5.428	5.891	6.374	9.057	12.681	17.583	24.039	32.400
12	1.127	1.268	1.428	1.601	1.780	1.972	2.175	2.390	2.628	2.889	3.174	3.484	3.818	4.178	4.564	4.978	5.421	5.894	6.397	6.930	10.000	14.000	19.000	25.500	34.000
13	1.138	1.284	1.469	1.665	1.866	2.083	2.316	2.564	2.836	3.133	3.456	3.804	4.178	4.579	5.007	5.463	5.948	6.463	6.998	7.564	11.000	15.500	21.500	29.000	38.000
14	1.149	1.319	1.513	1.732	1.960	2.201	2.459	2.737	3.046	3.387	3.761	4.160	4.585	5.037	5.517	6.026	6.565	7.134	7.734	8.365	12.000	17.000	23.500	32.000	42.000
15	1.161	1.346	1.558	1.801	2.059	2.337	2.637	2.961	3.311	3.697	4.119	4.578	5.065	5.580	6.124	6.698	7.303	7.939	8.607	9.307	13.000	18.500	25.500	35.000	46.000
16	1.173	1.373	1.605	1.873	2.163	2.470	2.801	3.158	3.544	3.961	4.409	4.889	5.401	5.946	6.525	7.139	7.789	8.475	9.197	9.955	14.000	20.000	27.500	38.000	50.000
17	1.184	1.400	1.653	1.948	2.282	2.693	3.159	3.700	4.320	4.929	5.528	6.118	6.700	7.274	7.842	8.405	8.964	9.519	10.071	10.721	15.000	21.500	29.500	40.000	53.000
18	1.196	1.428	1.702	2.026	2.407	2.854	3.380	3.996	4.717	5.560	6.444	7.369	8.336	9.346	10.391	11.473	12.594	13.755	14.957	16.200	22.000	30.500	41.000	55.000	70.000
19	1.208	1.457	1.754	2.107	2.527	3.028	3.617	4.316	5.142	6.116	7.263	8.613	10.097	11.728	13.508	15.448	17.549	19.822	22.267	24.884	27.684	30.671	33.948	37.516	41.372
20	1.220	1.486	1.806	2.181	2.653	3.207	3.870	4.651	5.604	6.728	8.062	9.646	11.523	13.749	16.367	19.461	23.108	27.393	32.428	38.388	45.388	53.538	62.948	73.716	85.863
24	1.270	1.808	2.033	2.583	3.225	4.048	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	100.000	130.000	170.000	220.000	280.000
25	1.282	1.841	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	50.668	62.669	77.388	95.396	118.542	148.550	185.562	230.574	290.586
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	85.395	110.065	143.371	184.676	237.376	304.820	385.820	480.820	590.820	720.820
40	1.480	2.208	3.262	4.801	7.040	10.266	14.974	21.725	31.409	45.259	65.001	93.051	132.782	188.884	267.964	378.721	530.000	730.000	1,000.000	1,350.000	1,800.000	2,400.000	3,200.000	4,200.000	5,500.000
50	1.645	2.692	4.394	7.107	11.467	18.420	28.000	41.000	60.000	88.000	130.000	190.000	270.000	390.000	560.000	810.000	1,150.000	1,600.000	2,200.000	3,100.000	4,400.000	6,100.000	8,400.000	11,500.000	15,800.000
60	1.817	3.281	5.892	10.520	18.678	32.893	57.946	101.251	150.000	210.000	300.000	430.000	600.000	830.000	1,150.000	1,600.000	2,200.000	3,100.000	4,400.000	6,100.000	8,400.000	11,500.000	15,800.000	21,500.000	29,000.000

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Financial Schedule for Present Value of Interest Factor ($PV_0 = FV_n (PVIF_{i,n})$)

Period n	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	0.595	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	0.553	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	0.273	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	0.217	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	0.171	0.130	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	0.132	0.090	0.072	0.053	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	0.294	0.270	0.247	0.227	0.208	0.191	0.176	0.162	0.100	0.058	0.041	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	0.073	0.031	0.014	0.015	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	0.207	0.187	0.168	0.152	0.137	0.124	0.112	0.050	0.008	0.001	0.001	0.013
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	0.162	0.145	0.130	0.116	0.104	0.093	0.031	0.000	0.000	0.000	0.000
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	0.143	0.128	0.115	0.103	0.092	0.082	0.020	0.000	0.000	0.000	0.000
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	0.107	0.093	0.081	0.071	0.062	0.000	0.000	0.000	0.000	0.000
16	0.853	0.728	0.623	0.533	0.457	0.394	0.339	0.292	0.252	0.218	0.188	0.163	0.141	0.123	0.107	0.093	0.080	0.069	0.060	0.052	0.000	0.000	0.000	0.000	0.000
17	0.844	0.714	0.605	0.513	0.436	0.371	0.317	0.270	0.231	0.198	0.170	0.146	0.125	0.108	0.093	0.080	0.069	0.059	0.051	0.044	0.000	0.000	0.000	0.000	0.000
18	0.836	0.700	0.587	0.494	0.416	0.350	0.296	0.250	0.212	0.180	0.153	0.130	0.111	0.095	0.081	0.069	0.059	0.051	0.044	0.038	0.000	0.000	0.000	0.000	0.000
19	0.828	0.686	0.570	0.475	0.396	0.331	0.277	0.232	0.194	0.164	0.138	0.116	0.098	0.083	0.070	0.060	0.051	0.043	0.037	0.031	0.000	0.000	0.000	0.000	0.000
20	0.820	0.673	0.554	0.456	0.377	0.312	0.258	0.213	0.174	0.149	0.124	0.104	0.087	0.073	0.061	0.051	0.043	0.037	0.031	0.026	0.000	0.000	0.000	0.000	0.000
24	0.788	0.622	0.492	0.390	0.310	0.247	0.197	0.158	0.126	0.102	0.082	0.066	0.053	0.043	0.035	0.028	0.023	0.019	0.015	0.013	0.000	0.000	0.000	0.000	0.000
25	0.780	0.610	0.478	0.375	0.295	0.233	0.184	0.146	0.116	0.092	0.074	0.059	0.047	0.038	0.030	0.024	0.020	0.016	0.013	0.010	0.000	0.000	0.000	0.000	0.000
30	0.742	0.552	0.412	0.308	0.231	0.174	0.131	0.099	0.075	0.057	0.044	0.033	0.026	0.020	0.015	0.012	0.009	0.007	0.005	0.004	0.000	0.000	0.000	0.000	0.000
40	0.672	0.453	0.307	0.208	0.142	0.097	0.067	0.046	0.032	0.022	0.015	0.011	0.008	0.005	0.004	0.003	0.002	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000
50	0.608	0.372	0.228	0.141	0.087	0.054	0.034	0.021	0.013	0.009	0.005	0.003	0.002	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.550	0.305	0.170	0.095	0.054	0.030	0.017	0.010	0.006	0.003	0.002	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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ATTACHMENT C

Financial table for Future Value Interest Factor Annuity (FVA_n = A (FVIFA_n))

Period n	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%
1	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
2	2.010	2.020	2.030	2.040	2.050	2.060	2.070	2.080	2.090	2.100	2.110	2.120	2.130	2.140	2.150	2.160	2.170	2.180	2.190	2.200	2.240	2.280	2.320	2.360	2.400
3	3.030	3.060	3.091	3.122	3.152	3.184	3.215	3.246	3.276	3.310	3.342	3.374	3.407	3.440	3.473	3.506	3.539	3.572	3.606	3.640	3.778	3.918	4.062	4.210	4.360
4	4.060	4.122	4.184	4.248	4.310	4.375	4.440	4.508	4.573	4.641	4.710	4.779	4.850	4.921	4.993	5.066	5.141	5.215	5.291	5.368	5.694	6.016	6.362	6.725	7.104
5	5.101	5.204	5.309	5.415	5.528	5.637	5.751	5.857	5.965	6.105	6.228	6.353	6.480	6.610	6.742	6.877	7.014	7.154	7.297	7.442	8.048	8.700	9.398	10.148	10.846
6	6.162	6.308	6.468	6.633	6.802	6.975	7.153	7.335	7.523	7.716	7.913	8.115	8.323	8.538	8.754	8.977	9.207	9.442	9.683	9.930	10.980	12.136	13.406	14.789	16.324
7	7.214	7.434	7.662	7.898	8.142	8.394	8.654	8.923	9.200	9.487	9.783	10.089	10.405	10.730	11.067	11.414	11.772	12.142	12.523	12.916	14.615	16.534	18.666	21.128	23.853
8	8.286	8.683	9.092	9.514	9.949	10.397	10.858	11.332	11.820	12.322	12.837	13.365	13.906	14.460	15.028	15.611	16.209	16.822	17.450	18.093	20.498	23.233	26.208	29.434	32.914
9	9.389	9.755	10.159	10.583	11.027	11.491	11.978	12.488	13.021	13.579	14.164	14.776	15.416	16.085	16.784	17.504	18.245	19.008	19.793	20.599	24.172	28.293	32.762	37.582	42.762
10	10.462	10.950	11.464	12.008	12.578	13.181	13.816	14.487	15.193	15.933	16.722	17.549	18.420	19.337	20.304	21.322	22.381	23.482	24.625	25.810	30.840	36.433	42.433	48.842	55.662
11	11.567	12.169	12.808	13.486	14.207	14.972	15.784	16.644	17.553	18.511	19.519	20.580	21.694	22.862	24.086	25.367	26.706	28.104	29.562	31.080	37.372	44.705	52.492	60.742	69.462
12	12.683	13.412	14.192	15.026	15.908	16.841	17.827	18.868	19.966	21.122	22.337	23.613	24.951	26.352	27.817	29.348	30.946	32.612	34.347	36.152	44.016	53.472	63.442	73.938	84.982
13	13.809	14.680	15.618	16.627	17.719	18.897	20.165	21.525	22.989	24.560	26.239	28.028	29.928	31.940	34.066	36.308	38.668	41.148	43.749	46.473	56.016	67.488	79.998	93.568	108.218
14	14.947	15.974	17.066	18.292	19.569	21.001	22.590	24.340	26.264	28.374	30.672	33.161	35.842	38.717	41.788	45.057	48.527	52.200	56.078	60.164	72.448	86.864	102.432	119.182	137.142
15	16.097	17.283	18.599	20.024	21.579	23.276	25.129	27.151	29.354	31.740	34.311	37.070	40.020	43.164	46.505	50.146	54.090	58.340	62.898	67.768	82.864	100.464	119.712	140.652	163.312
16	17.258	18.659	20.162	21.762	23.498	25.398	27.465	29.711	32.149	34.783	37.616	40.650	43.888	47.334	51.090	55.160	59.546	64.252	69.280	74.634	92.864	113.712	136.312	160.712	186.862
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	53.720	58.934	64.540	70.550	76.970	83.810	91.070	98.750	121.264	145.864	172.612	201.612	232.912
18	19.615	21.412	23.414	25.645	28.132	30.906	33.999	37.450	41.301	45.589	50.339	55.570	61.290	67.510	74.240	81.490	89.260	97.560	106.390	115.750	142.464	170.864	201.912	235.612	281.912
19	20.811	22.841	25.117	27.671	30.539	33.760	37.379	41.446	46.018	51.168	56.939	63.440	70.748	78.969	88.212	98.500	109.840	122.240	135.700	150.230	181.464	215.464	262.312	312.912	368.312
20	22.019	24.297	26.870	29.778	33.083	36.795	40.985	45.762	51.160	57.275	64.205	72.052	80.947	91.025	102.444	115.280	129.640	145.530	163.060	182.250	217.864	268.864	336.312	419.712	519.912
24	28.973	30.422	34.428	38.083	44.502	50.816	58.117	66.765	76.900	88.497	102.174	118.155	136.631	158.659	184.188	213.978	248.984	290.484	339.484	397.984	488.864	619.864	799.864	1049.864	1399.864
25	28.243	32.030	36.459	41.546	47.727	54.855	63.249	73.106	84.701	98.347	114.413	133.334	155.620	181.871	212.783	249.214	292.105	342.484	400.484	468.984	589.864	769.864	1029.864	1399.864	1899.864
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	293.189	356.787	434.745	530.321	647.439	789.948	959.948	1169.948	1499.864	1999.864	2699.864	3599.864	4799.864
40	48.886	60.402	75.401	95.026	120.060	154.762	199.734	257.434	333.832	434.981	567.981	739.981	969.981	1279.981	1699.981	2279.981	3079.981	4179.981	5679.981	7679.981	10499.864	14299.864	18999.864	25499.864	33999.864
50	64.483	84.572	112.797	152.687	206.349	280.336	406.529	573.770	813.981	1113.981	1513.981	2073.981	2843.981	3873.981	5243.981	7073.981	9573.981	13073.981	17773.981	24173.981	32473.981	43473.981	57973.981	77473.981	103473.981
60	81.570	114.052	163.053	237.991	353.584	533.128	813.520	1,253.211	1,944.79	3,033.82	4,509.82	6,659.82	9,799.82	14,599.82	21,999.82	33,199.82	49,799.82	73,999.82	110,999.82	165,999.82	249,999.82	369,999.82	549,999.82	819,999.82	1,199,999.82

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Financial Table for Present Value Interest Factor Annuity ($PVA_n = A(PVIFA_{i,n})$)

Period n	1%	2%	3%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	24%	28%	32%	36%	40%	
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	1.970	1.942	1.913	1.886	1.859	1.833	1.808	1.783	1.759	1.736	1.713	1.690	1.668	1.647	1.626	1.605	1.585	1.566	1.547	1.528	1.497	1.392	1.326	1.276	1.224
3	2.941	2.884	2.839	2.775	2.723	2.673	2.624	2.577	2.531	2.487	2.444	2.402	2.361	2.322	2.286	2.251	2.210	2.174	2.140	2.106	1.981	1.868	1.766	1.674	1.589
4	3.902	3.808	3.717	3.630	3.546	3.465	3.387	3.312	3.240	3.170	3.102	3.037	2.974	2.914	2.855	2.798	2.743	2.690	2.639	2.589	2.404	2.241	2.096	1.966	1.849
5	4.853	4.713	4.580	4.452	4.329	4.212	4.100	3.993	3.890	3.791	3.696	3.605	3.517	3.433	3.353	3.274	3.199	3.127	3.058	2.991	2.745	2.532	2.345	2.181	2.035
6	5.795	5.601	5.417	5.242	5.076	4.917	4.766	4.623	4.486	4.355	4.231	4.111	3.998	3.889	3.784	3.685	3.589	3.498	3.410	3.326	2.991	2.739	2.584	2.399	2.168
7	6.728	6.472	6.230	6.002	5.786	5.582	5.389	5.206	5.033	4.868	4.712	4.564	4.423	4.288	4.160	4.039	3.922	3.812	3.706	3.605	3.244	2.971	2.806	2.600	2.331
8	7.652	7.325	7.020	6.733	6.463	6.210	5.971	5.747	5.535	5.335	5.146	4.968	4.799	4.639	4.487	4.344	4.207	4.078	3.954	3.837	3.401	3.096	2.906	2.650	2.331
9	8.566	8.162	7.786	7.435	7.108	6.802	6.515	6.247	5.995	5.759	5.537	5.328	5.132	4.946	4.772	4.607	4.451	4.303	4.163	4.031	3.566	3.269	2.990	2.690	2.414
10	9.471	8.983	8.530	8.111	7.722	7.360	7.024	6.710	6.418	6.145	5.889	5.650	5.426	5.216	5.019	4.833	4.659	4.494	4.339	4.193	3.682	3.353	2.978	2.603	2.379
11	10.368	9.787	9.253	8.760	8.306	7.887	7.499	7.139	6.805	6.495	6.207	5.938	5.687	5.453	5.224	5.029	4.836	4.656	4.486	4.327	3.776	3.335	2.978	2.603	2.414
12	11.255	10.575	9.954	9.365	8.863	8.384	7.943	7.536	7.161	6.814	6.492	6.191	5.906	5.638	5.421	5.197	4.988	4.793	4.611	4.439	3.851	3.387	3.013	2.708	2.458
13	12.134	11.354	10.635	9.966	9.394	8.853	8.338	7.904	7.487	7.103	6.750	6.424	6.118	5.842	5.594	5.342	5.118	4.910	4.715	4.533	3.912	3.427	3.040	2.727	2.469
14	13.004	12.106	11.288	10.533	9.899	9.295	8.745	8.244	7.786	7.367	6.992	6.628	6.300	5.994	5.724	5.468	5.229	5.008	4.802	4.611	3.962	3.459	3.061	2.740	2.478
15	13.865	12.849	11.933	11.174	10.500	9.853	9.285	8.745	8.244	7.824	7.379	6.974	6.604	6.265	5.957	5.655	5.324	5.092	4.876	4.675	4.001	3.483	3.076	2.750	2.484
16	14.718	13.578	12.561	11.652	10.939	10.250	9.647	9.061	8.512	8.024	7.549	7.120	6.729	6.373	6.047	5.715	5.475	5.222	4.990	4.775	4.039	3.518	3.097	2.763	2.492
17	15.562	14.292	13.166	12.166	11.274	10.524	9.783	9.122	8.544	8.022	7.549	7.120	6.729	6.373	6.047	5.715	5.475	5.222	4.990	4.775	4.039	3.518	3.097	2.763	2.492
18	16.398	14.992	13.754	12.659	11.800	10.928	10.059	9.372	8.756	8.201	7.702	7.250	6.840	6.467	6.128	5.818	5.534	5.273	5.033	4.812	4.089	3.529	3.104	2.767	2.494
19	17.226	15.678	14.324	13.134	12.085	11.158	10.336	9.604	8.950	8.365	7.839	7.366	6.938	6.530	6.198	5.877	5.584	5.316	5.070	4.844	4.097	3.539	3.109	2.770	2.496
20	18.046	16.351	14.877	13.590	12.462	11.470	10.594	9.818	9.128	8.514	7.965	7.469	7.025	6.623	6.259	5.929	5.628	5.353	5.101	4.870	4.110	3.546	3.113	2.772	2.497
24	21.243	18.914	16.956	15.247	13.799	12.550	11.469	10.529	9.707	8.985	8.348	7.784	7.283	6.835	6.434	6.073	5.746	5.451	5.182	4.937	4.143	3.562	3.121	2.776	2.499
25	21.023	19.223	17.413	15.622	14.094	12.783	11.654	10.675	9.823	9.077	8.422	7.843	7.330	6.873	6.464	6.097	5.766	5.467	5.195	4.948	4.147	3.564	3.122	2.776	2.489
30	25.808	22.397	19.600	17.292	15.373	13.765	12.409	11.258	10.274	9.477	8.694	8.035	7.496	7.003	6.586	6.177	5.829	5.517	5.235	4.979	4.160	3.569	3.124	2.778	2.500
40	32.835	27.355	23.115	19.793	17.159	15.046	13.332	11.925	10.757	9.779	8.941	8.244	7.634	7.105	6.642	6.233	5.871	5.538	5.258	4.997	4.166	3.571	3.125	2.778	2.500
50	39.196	31.024	25.730	21.462	18.256	15.762	13.801	12.233	10.962	9.915	9.042	8.304	7.675	7.133	6.661	6.246	5.880	5.554	5.262	4.999	4.167	3.571	3.125	2.778	2.500
60	44.955	34.761	27.676	22.623	18.929	16.161	14.039	12.377	11.048	9.967	9.074	8.324	7.687	7.140	6.665	6.249	5.882	5.555	5.263	5.000	4.167	3.571	3.125	2.778	2.500

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