

UNIVERSITY OF ESWATINI
DEPARTMENT OF ACCOUNTING AND FINANCE
MAIN EXAMINATION PAPER DECEMBER 2018

DEGREE/ DIPLOMA AND

YEAR OF STUDY : B.COM LEVEL 3 (IDE)

TITLE OF PAPER : PRINCIPLES OF FINANCE

COURSE CODE : AC213 (M) DECEMBER 2018

TOTAL MARKS : 100 MARKS

TIME ALLOWED : THREE (3) HOURS

- INSTRUCTIONS
- 1 There are four (4) questions, answer all.
 - 2 Begin the solution to each question on a new page.
 - 3 The marks awarded for a question are indicated at the end of each question.
 - 4 Show all the necessary workings.
 - 5 Round off as you deem appropriate.

Note: You are reminded that in assessing your work, account will be taken of accuracy of the language and general quality of expression, together with layout and presentation of your answer.

THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN GRANTED BY THE INVILATOR OR SUPERVISOR.

SPECIAL REQUIREMENTS: CALCULATOR

QUESTION 1

Assume that you are considering selecting assets from among the following two options:

Asset A			Asset B		
Market condition	Return	Probability	Market condition	Return	Probability
Good	16%	0.25	Good	20%	0.25
Average	12%	0.50	Average	14%	0.50
Poor	8%	0.25	Poor	8%	0.25

- Compute the expected return of each stock. Which stock is most desirable by this measure? (6 Marks)
- Compute the standard deviation of the annual rate of return for each stock? By this measure, which is the preferable stock? (6 Marks)
- Compute the coefficient of variation for each stock. By this measure relative measure of risk, which stock is preferable? (6 Marks)
- Assuming that you have a E100 000 which you split 50/50 between asset A and Asset B, compute the expected return of the portfolio. (3 Marks)
- Distinguish between business risk and financial risk. (4)

Total (25 Marks)

QUESTION 2

- a) Suppose Edith Baker deposits E10 000 into a savings account today for which the bank pays simple interest at a rate of 10% per annum.
How much money will Edith Baker have in the account at the end of three years?
(5 Marks)
- b) For the same deposit in (a) above, how much will Edith Baker have at the end of three years if the interest is compounded annually at the same rate of 10%? (5 Marks)
- c) Comment on the differences on the results in (a) and (b) above. (5 Marks)
- d) Nokuthula Dlamini is certain that she will graduate five years from today and would like to buy herself a laptop at that time. Computronics (Pty) Limited informed her that the laptop model she is interested in will cost E30 000 at the future date. If Nokuthula Dlamini can earn interest at 12% per annum compounded annually in a savings account, how much must she deposit into the savings account today? (5 Marks)
- e) Mary Khumalo wants to deposit E15 000 at the end of each year into a special savings account for five years. The bank has promised her a rate of interest of 10% per annum compounded annually on her savings, how much money will she have at the end of her savings term? (5 Marks)

Total: 25 Marks

QUESTION 3

- a) The directors and managers of ABC Limited are acting in an inconsistent manner to the objective of maximising the wealth of shareholders. Identify the problem and briefly explain it. How do you think this problem can be addressed in ABC Limited? (8 Marks)
- b) Define the term arbitrage. Explain why arbitrage opportunities do not last very long? (4 Marks)
- c) Rank bonds, debentures, preference shares and ordinary shares in terms of their riskiness and provide reasons for your justification. (8 Marks)
- d) Briefly explain non diversifiable risk? (5 Mark)

Total: (25 Marks)

QUESTION 4

Discuss five factors that affect the value of a company's shares? (25 Marks)

Table 1: Future value of R1 at the end of n periods

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n	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
0	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	1.1700	1.1800	1.1900	1.2000	1.2100	1.2200	1.2300	1.2400	1.2500	1.2600	1.2700	1.2800	1.2900	1.3000
2	1.0201	1.0404	1.0609	1.0816	1.1025	1.1236	1.1448	1.1661	1.1876	1.2092	1.2309	1.2527	1.2746	1.2966	1.3187	1.3409	1.3632	1.3856	1.4081	1.4307	1.4534	1.4762	1.4990	1.5219	1.5449	1.5679	1.5910	1.6141	1.6373	1.6605
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	1.4807	1.5185	1.5563	1.5941	1.6319	1.6697	1.7075	1.7453	1.7831	1.8209	1.8587	1.8965	1.9343	1.9721	2.0099	2.0477	2.0855
4	1.0406	1.0822	1.1250	1.1689	1.2139	1.2599	1.3069	1.3540	1.4021	1.4502	1.4984	1.5466	1.5948	1.6430	1.6912	1.7394	1.7876	1.8358	1.8840	1.9322	1.9804	2.0286	2.0768	2.1250	2.1732	2.2214	2.2696	2.3178	2.3660	2.4142
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	2.1922	2.2871	2.3850	2.4859	2.5898	2.6967	2.8066	2.9195	3.0354	3.1543	3.2762	3.3991	3.5240	3.6509
6	1.0615	1.1262	1.1934	1.2631	1.3354	1.4103	1.4879	1.5683	1.6515	1.7376	1.8267	1.9188	2.0139	2.1120	2.2131	2.3172	2.4243	2.5345	2.6477	2.7640	2.8833	3.0056	3.1309	3.2592	3.3905	3.5248	3.6621	3.8024	3.9457	4.0920
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	2.8259	2.9999	3.1781	3.3605	3.5471	3.7379	3.9329	4.1321	4.3355	4.5431	4.7549	4.9709	5.1911	5.4165	5.6471
8	1.0829	1.1712	1.2668	1.3688	1.4773	1.5924	1.7143	1.8432	1.9792	2.1224	2.2729	2.4308	2.5962	2.7692	2.9500	3.1387	3.3354	3.5402	3.7531	3.9742	4.2035	4.4410	4.6868	4.9409	5.2034	5.4744	5.7539	6.0420	6.3387	6.6440
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	3.7929	4.0770	4.3702	4.6726	4.9843	5.3054	5.6359	5.9759	6.3254	6.6845	7.0532	7.4316	7.8200	8.2184	8.6268
10	1.1046	1.2199	1.3459	1.4832	1.6320	1.7935	1.9680	2.1567	2.3600	2.5781	2.8112	3.0604	3.3259	3.6079	3.9066	4.2221	4.5546	4.9042	5.2710	5.6552	6.0570	6.4765	6.9138	7.3691	7.8425	8.3350	8.8467	9.3778	9.9284	10.4986
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	5.1057	5.5871	6.0877	6.6077	7.1473	7.7067	8.2861	8.8857	9.5057	10.1463	10.8078	11.4905	12.1947	12.9206	13.6684
12	1.1268	1.2682	1.4258	1.6019	1.7969	1.9999	2.2212	2.4619	2.7336	3.0378	3.3757	3.7486	4.1578	4.6045	5.0899	5.6053	6.1519	6.7309	7.3435	7.9900	8.6717	9.3890	10.1432	10.9356	11.7675	12.6392	13.5519	14.5059	15.5016	16.5393
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	6.8803	7.6860	8.5712	9.5472	10.6153	11.7769	13.0334	14.3862	15.8368	17.3867	19.0374	20.7903	22.6469	24.6086	26.6768
14	1.1495	1.3195	1.5126	1.7301	1.9839	2.2769	2.6109	2.9979	3.4399	3.9391	4.4976	5.1177	5.8017	6.5529	7.3736	8.2673	9.2363	10.3943	11.7559	13.2660	14.9382	16.7851	18.8204	21.0580	23.5016	26.1444	28.9867	32.0324	35.2864	38.7524
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	9.2643	10.5308	11.9489	13.5210	15.2504	17.1404	19.1945	21.4262	23.8482	26.4741	29.3175	32.3819	35.6708	39.1877	42.9351
16	1.1726	1.3768	1.6077	1.8770	2.1979	2.5702	2.9959	3.4872	4.0463	4.6753	5.3864	6.1819	7.0743	8.0660	9.1685	10.3943	11.7559	13.2660	14.9382	16.7851	18.8204	21.0580	23.5016	26.1551	29.0322	32.1464	35.5009	39.1084	42.9724	47.0964
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	10.7613	12.4643	14.4000	16.5829	19.0286	21.7516	24.7664	28.0886	31.7337	35.7264	40.0814	44.8135	49.9384	55.3611	61.0964	67.1584
18	1.1961	1.4282	1.7044	2.0358	2.4251	2.8783	3.4114	4.0384	4.7633	5.5993	6.5598	7.6583	8.9083	10.3243	11.9207	13.7129	15.7154	17.9438	20.4137	23.1416	26.1432	29.5342	33.3304	37.5484	42.1949	47.2864	52.8384	58.8674	65.3894	72.4194
19	1.2081	1.4568	1.7535	2.1068	2.5270	3.0256	3.6165	4.3157	5.1417	6.1159	7.2633	8.6128	10.1974	12.0557	14.2318	16.7516	19.6307	22.8851	26.5304	30.5834	35.0614	40.0814	45.6614	51.8194	58.5814	65.9644	73.9944	82.6964	92.0864	102.1764
20	1.2203	1.4859	1.8081	2.1931	2.6453	3.2014	3.8859	4.6933	5.6409	6.7553	8.0533	9.5628	11.3014	13.2967	15.5754	18.1643	21.0814	24.3544	28.0014	32.0514	36.5334	41.5764	47.2094	53.4614	60.3534	67.9044	76.1444	85.0944	94.7844	105.2344
21	1.2324	1.5157	1.8603	2.2788	2.7860	3.3996	4.1406	5.0338	6.1088	7.4002	8.9492	10.8038	13.0211	15.6676	18.8215	22.5051	26.6443	31.2664	36.4014	42.0714	48.3044	55.1394	62.6044	70.7394	79.5844	89.1644	99.5144	110.6544	122.5944	135.3444
22	1.2447	1.5460	1.9191	2.3698	2.9283	3.6083	4.4530	5.5165	6.8588	8.5202	10.4402	12.6602	15.2164	18.1454	21.4854	25.2744	29.5494	34.3394	39.6844	45.6344	52.2294	59.5044	67.5044	76.2644	85.8244	96.2144	107.4644	119.5944	132.6244	146.5644
23	1.2572	1.5769	1.9736	2.4647	3.0715	3.8197	4.7405	5.8715	7.2579	8.9543	11.0263	13.5523	16.6266	20.3616	24.8915	29.9644	35.6294	41.9344	48.9244	56.6494	65.1444	74.4544	84.6144	95.6644	107.6344	120.5444	134.4144	149.2644	165.1144	182.0744
24	1.2697	1.6084	2.0328	2.5652	3.2252	4.0389	5.0374	6.2714	7.7994	9.6714	11.9454	14.6714	17.9014	21.6854	26.0744	31.1294	36.9044	43.4594	50.8444	59.0144	68.0144	77.8844	88.6644	100.3944	113.1144	126.8544	141.6444	157.5044	174.4544	192.5144
25	1.2824	1.6406	2.0938	2.6658	3.3864	4.2919	5.4274	6.8485	8.6231	10.8347	13.5855	17.0001	21.2305	26.4619	32.9190	39.6544	47.7294	57.2044	68.1444	80.6044	94.6444	110.3244	127.7044	146.8444	167.7844	190.5644	215.2244	241.7944	270.3044	300.7844
26	1.2953	1.6753	2.1566	2.7775	3.5475	4.5181	5.7392	7.2606	9.1431	11.4377	14.2054	17.6064	21.8014	26.8514	32.8194	39.7644	48.7594	59.7644	72.8444	88.0444	105.4244	125.0444	146.9444	171.1844	197.8044	226.8644	258.4044	292.4644	329.0744	368.2844
27	1.3082	1.7069	2.2213	2.8834	3.7335	4.8223	6.2139	7.9881	10.2451	13.1100	16.7386	21.3249	27.1093	34.3899	43.5353	53.5353	64.4444	77.3144	92.2044	109.1844	128.3244	150.6844	176.3244	205.2044	237.3844	272.9244	311.8844	354.3144	400.2644	449.7844
28	1.3213	1.7406	2.2879	3.0098	3.9279	5.0781	6.5292	8.3834	10.7114	13.7754	17.7294	22.7454	29.0814	36.9014	46.2644	57.2344	69.8644	84.2244	101.3844	121.4044	144.3444	170.2444	200.1644	234.1644	272.3044	314.6444	361.2444	412.1444	467.4044	527.0644
29	1.3345	1.7758	2.3566	3.1187	4.1161	5.4184	7.1143	9.3173	12.1722	15.8631	20.6237	26.7499	34.6158	44.6931	57.5755	73.4144	92.2644	114.1844	139.2444	168.5044	202.0244	240.8644	285.1644	335.0044	390.4444	451.6444	519.6444	594.5044	677.1844	767.7444
30	1.3478	1.8117	2.4373	3.2591	4.3173	5.7743	7.6743	10.1743	13.3373	17.3294	22.3294	28.6294	36.4294	46.8294	59.9294	76.8294	97.6294	122.4294	152.2294	187.0294	226.8294	271.6294	322.4294	379.2294	443.0294	513.8294	592.6294	680.4294	778.2294	886.0294

Table 2: Present value of R1 at the end of n periods

	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
0	1.0000	0.9803	0.9606	0.9409	0.9210	0.9000	0.8790	0.8579	0.8367	0.8154	0.7939	0.7723	0.7506	0.7288	0.7069	0.6849	0.6628	0.6406	0.6183	0.5959
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	0.8623	0.8551	0.8480	0.8410	0.8343
2	0.9803	0.9706	0.9612	0.9519	0.9428	0.9338	0.9249	0.9161	0.9075	0.8991	0.8908	0.8826	0.8745	0.8665	0.8586	0.8508	0.8431	0.8355	0.8280	0.8207
3	0.9706	0.9623	0.9541	0.9460	0.9380	0.9301	0.9223	0.9146	0.9070	0.8995	0.8921	0.8848	0.8776	0.8705	0.8635	0.8566	0.8497	0.8430	0.8364	0.8299
4	0.9612	0.9538	0.9465	0.9393	0.9322	0.9252	0.9183	0.9115	0.9048	0.8982	0.8917	0.8853	0.8790	0.8728	0.8667	0.8607	0.8548	0.8490	0.8433	0.8377
5	0.9519	0.9457	0.9395	0.9334	0.9274	0.9215	0.9157	0.9099	0.9043	0.8987	0.8932	0.8878	0.8825	0.8772	0.8720	0.8668	0.8617	0.8566	0.8516	0.8467
6	0.9428	0.9370	0.9312	0.9255	0.9199	0.9144	0.9089	0.9035	0.8982	0.8930	0.8878	0.8827	0.8776	0.8726	0.8676	0.8627	0.8578	0.8530	0.8482	0.8435
7	0.9337	0.9282	0.9227	0.9173	0.9120	0.9067	0.9015	0.8963	0.8912	0.8861	0.8811	0.8761	0.8712	0.8663	0.8615	0.8567	0.8520	0.8473	0.8427	0.8381
8	0.9247	0.9194	0.9141	0.9089	0.9038	0.8987	0.8937	0.8887	0.8838	0.8789	0.8741	0.8693	0.8646	0.8599	0.8553	0.8507	0.8461	0.8416	0.8371	0.8327
9	0.9155	0.9104	0.9053	0.9003	0.8954	0.8905	0.8857	0.8809	0.8762	0.8715	0.8668	0.8622	0.8576	0.8531	0.8486	0.8442	0.8397	0.8353	0.8310	0.8267
10	0.9065	0.9015	0.8966	0.8917	0.8869	0.8821	0.8774	0.8727	0.8681	0.8635	0.8590	0.8545	0.8500	0.8456	0.8412	0.8368	0.8325	0.8282	0.8240	0.8198
11	0.8965	0.8916	0.8868	0.8820	0.8773	0.8727	0.8681	0.8636	0.8591	0.8547	0.8503	0.8459	0.8416	0.8373	0.8330	0.8288	0.8246	0.8204	0.8163	0.8122
12	0.8874	0.8826	0.8779	0.8732	0.8686	0.8641	0.8596	0.8552	0.8508	0.8465	0.8422	0.8379	0.8337	0.8295	0.8253	0.8212	0.8171	0.8130	0.8090	0.8050
13	0.8787	0.8739	0.8692	0.8646	0.8601	0.8556	0.8512	0.8468	0.8425	0.8382	0.8340	0.8298	0.8256	0.8215	0.8174	0.8133	0.8093	0.8053	0.8013	0.7973
14	0.8690	0.8642	0.8595	0.8549	0.8504	0.8459	0.8415	0.8372	0.8329	0.8287	0.8245	0.8204	0.8163	0.8122	0.8082	0.8042	0.8002	0.7962	0.7922	0.7883
15	0.8613	0.7450	0.6419	0.5555	0.4810	0.4173	0.3624	0.3162	0.2745	0.2394	0.2090	0.1827	0.1599	0.1401	0.1229	0.0649				
16	0.8528	0.7442	0.6459	0.5595	0.4850	0.4213	0.3664	0.3202	0.2785	0.2434	0.2130	0.1867	0.1639	0.1441	0.1269	0.0654				
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	0.0451				
18	0.8360	0.7002	0.5874	0.4956	0.4185	0.3536	0.2988	0.2525	0.2133	0.1790	0.1508	0.1268	0.1064	0.0891	0.0742	0.0313				
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	0.0313				
20	0.8195	0.6720	0.5520	0.4536	0.3726	0.3074	0.2534	0.2086	0.1714	0.1404	0.1146	0.0930	0.0750	0.0608	0.0491	0.0261				
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	0.0217				
22	0.8034	0.6465	0.5212	0.4219	0.3419	0.2772	0.2245	0.1817	0.1467	0.1181	0.0947	0.0756	0.0608	0.0491	0.0402	0.0151				
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	0.0151				
24	0.7876	0.6219	0.4921	0.3891	0.3081	0.2443	0.1934	0.1528	0.1203	0.0942	0.0732	0.0585	0.0476	0.0387	0.0308	0.0126				
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	0.0105				
26	0.7720	0.5981	0.4643	0.3618	0.2819	0.2206	0.1718	0.1336	0.1036	0.0800	0.0613	0.0465	0.0348	0.0255	0.0181	0.0073				
27	0.7644	0.5859	0.4502	0.3468	0.2678	0.2074	0.1609	0.1252	0.0976	0.0765	0.0597	0.0469	0.0369	0.0291	0.0230	0.0073				
28	0.7568	0.5744	0.4368	0.3324	0.2534	0.1930	0.1465	0.1108	0.0832	0.0621	0.0453	0.0325	0.0225	0.0147	0.0086	0.0031				
29	0.7493	0.5631	0.4243	0.3207	0.2429	0.1846	0.1406	0.1073	0.0822	0.0630	0.0485	0.0374	0.0289	0.0224	0.0174	0.0051				
30	0.7419	0.5517	0.4119	0.3083	0.2304	0.1721	0.1281	0.0984	0.0762	0.0570	0.0425	0.0314	0.0229	0.0164	0.0114	0.0042				

Tab. 3: Future value of an annuity of R1 per period for n periods

n	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
0	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	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	0.0000	
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
2	2.0100	2.0206	2.0310	2.0413	2.0516	2.0618	2.0720	2.0821	2.0922	2.1023	2.1124	2.1225	2.1325	2.1425	2.1525	2.1625	2.1725	2.1825	2.1925	2.2025	2.2125	2.2225	2.2325	2.2425	2.2525	2.2625	2.2725	2.2825	2.2925	
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	3.5388	3.5721	3.6055	3.6390	3.6726	3.7063	3.7401	3.7740	3.8080	3.8421	3.8763	3.9106	3.9450	
4	4.0604	4.1216	4.1833	4.2455	4.3082	4.3714	4.4351	4.4993	4.5640	4.6292	4.6949	4.7611	4.8278	4.8950	4.9627	5.0309	5.0996	5.1688	5.2385	5.3087	5.3794	5.4506	5.5223	5.5945	5.6672	5.7404	5.8141	5.8883	5.9630	
5	5.1010	5.2040	5.3091	5.4165	5.5256	5.6371	5.7507	5.8666	5.9847	6.1051	6.2278	6.3528	6.4803	6.6101	6.7424	6.8772	7.0145	7.1543	7.2966	7.4414	7.5887	7.7385	7.8908	8.0456	8.2030	8.3629	8.5254	8.6905	8.8582	
6	6.1620	6.2981	6.4368	6.5781	6.7220	6.8685	7.0176	7.1694	7.3239	7.4811	7.6411	7.8038	7.9692	8.1374	8.3085	8.4826	8.6597	8.8398	9.0229	9.2091	9.3983	9.5905	9.7857	9.9839	10.1851	10.3893	10.5965	10.8067	11.0199	
7	7.2355	7.4343	7.6625	7.8983	8.1420	8.3938	8.6540	8.9228	9.2004	9.4872	9.7835	10.0890	10.4047	10.7305	11.0668	12.9159	12.9159	12.9159	12.9159	12.9159	12.9159	12.9159	12.9159	12.9159	12.9159	12.9159	12.9159	12.9159	12.9159	
8	8.3865	8.5530	8.7894	9.0341	9.2871	9.5485	9.8184	10.0968	10.3838	10.6794	10.9837	11.2967	11.6184	11.9488	12.2879	12.6357	12.9923	13.3577	13.7320	14.1152	14.5074	14.9086	15.3188	15.7380	16.1662	16.6034	17.0496	17.5048	17.9690	
9	9.5685	9.7546	10.1591	10.5828	11.0266	11.4915	11.9780	12.4876	13.0210	13.5795	14.1640	14.7757	15.4157	16.0853	16.7858	20.7989	20.7989	20.7989	20.7989	20.7989	20.7989	20.7989	20.7989	20.7989	20.7989	20.7989	20.7989	20.7989	20.7989	
10	10.7622	10.9437	11.3533	11.8068	12.3061	12.8532	13.4591	14.1248	14.8514	15.6399	16.4914	17.3169	18.2174	19.1949	20.2504	21.3860	22.6037	23.9056	25.3037	26.7991	28.3938	30.0900	31.8899	33.7957	35.8096	37.9340	40.1712	42.5236	44.9936	
11	11.9568	12.1687	12.8078	13.4864	14.2068	14.9716	15.7836	16.6	17.5416	18.4009	19.2636	20.1300	21.0000	21.8734	22.7500	23.6300	24.5134	25.4000	26.2900	27.1834	28.0800	28.9800	29.8834	30.7900	31.6999	32.6134	33.5300	34.4499	35.3734	
12	13.1568	13.3820	13.9200	14.6068	15.3420	16.1264	16.9600	17.8436	18.7764	19.7592	20.7920	21.8248	22.8576	23.8904	24.9232	25.9560	26.9888	28.0216	29.0544	30.0872	31.1200	32.1528	33.1856	34.2184	35.2512	36.2840	37.3168	38.3496	39.3824	
13	13.8093	14.6803	15.6178	16.6268	17.7130	18.8821	20.1406	21.4953	22.9554	24.5227	26.2116	28.0291	29.9847	32.0887	34.3519	48.4966	48.4966	48.4966	48.4966	48.4966	48.4966	48.4966	48.4966	48.4966	48.4966	48.4966	48.4966	48.4966	48.4966	
14	14.9474	15.9450	17.0861	18.3813	19.8349	21.4513	23.2453	25.2220	27.3883	29.7500	32.3136	35.0864	38.0756	41.2972	44.7688	50.5000	50.5000	50.5000	50.5000	50.5000	50.5000	50.5000	50.5000	50.5000	50.5000	50.5000	50.5000	50.5000	50.5000	
15	16.0969	17.2934	18.5989	20.0226	21.5786	23.2760	25.1290	27.1521	29.3609	31.7725	34.4054	37.2797	40.4175	43.8424	47.5804	53.3000	53.3000	53.3000	53.3000	53.3000	53.3000	53.3000	53.3000	53.3000	53.3000	53.3000	53.3000	53.3000	53.3000	
16	17.2599	18.5939	20.1569	21.8534	23.6955	25.6854	27.8281	30.1275	32.5894	35.3194	38.3349	41.6424	45.2500	49.1656	53.3904	59.9000	59.9000	59.9000	59.9000	59.9000	59.9000	59.9000	59.9000	59.9000	59.9000	59.9000	59.9000	59.9000	59.9000	
17	18.4304	20.0121	21.7416	23.6275	25.6975	28.0404	30.8402	33.7502	36.9737	40.5447	44.5008	48.8837	53.7391	59.1176	65.0751	72.6000	72.6000	72.6000	72.6000	72.6000	72.6000	72.6000	72.6000	72.6000	72.6000	72.6000	72.6000	72.6000	72.6000	
18	19.6164	21.4233	23.3121	25.3615	27.6453	30.2682	33.1906	36.3272	39.7837	43.6630	47.9924	52.7868	58.0700	63.8500	70.7000	78.6000	78.6000	78.6000	78.6000	78.6000	78.6000	78.6000	78.6000	78.6000	78.6000	78.6000	78.6000	78.6000	78.6000	
19	20.8109	22.8406	25.1169	27.6712	30.5390	33.7600	37.3790	41.4463	46.0185	51.1591	56.9395	63.4397	70.7494	78.9692	88.2118	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	
20	22.0190	24.2974	26.8028	29.5305	32.5865	36.0730	39.9935	44.3530	49.1660	54.5370	60.4700	66.9700	73.9400	81.3800	89.3000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	
21	23.2392	25.7833	28.6765	31.9692	35.7193	39.9927	44.8652	50.4229	56.7645	64.0025	72.2651	81.6987	92.4699	104.7684	118.8101	225.0256	225.0256	225.0256	225.0256	225.0256	225.0256	225.0256	225.0256	225.0256	225.0256	225.0256	225.0256	225.0256	225.0256	
22	24.4747	27.2980	30.5538	34.2680	38.505	43.2792	48.6932	54.8056	61.6224	69.2396	77.6624	86.8960	96.9400	107.8000	119.4800	225.0256	225.0256	225.0256	225.0256	225.0256	225.0256	225.0256	225.0256	225.0256	225.0256	225.0256	225.0256	225.0256	225.0256	
23	25.7163	28.8450	32.4529	36.6179	41.4305	46.9958	53.4361	60.8933	69.5319	79.5430	91.1479	104.6029	120.2048	138.2970	159.2764	326.2369	326.2369	326.2369	326.2369	326.2369	326.2369	326.2369	326.2369	326.2369	326.2369	326.2369	326.2369	326.2369	326.2369	
24	26.9635	30.3203	34.3269	39.0362	44.5615	50.9515	58.2866	66.6833	76.2519	87.1999	99.8433	114.2883	130.7408	149.4068	170.2939	326.2369	326.2369	326.2369	326.2369	326.2369	326.2369	326.2369	326.2369	326.2369	326.2369	326.2369	326.2369	326.2369	326.2369	
25	28.2432	32.0303	36.4593	41.6459	47.7271	54.8645	63.2490	73.1059	84.7009	98.3471	114.4133	133.3339	155.6196	181.8708	212.7930	471.9811	471.9811	471.9811	471.9811	471.9811	471.9811	471.9811	471.9811	471.9811	471.9811	471.9811	471.9811	471.9811	471.9811	
26	29.5556	33.6709	38.6530	44.151	50.9156	58.2563	67.0627	77.5721	89.9833	104.6033	121.0999	140.0786	161.9740	200.8406	238.4993	881.8528	881.8528	881.8528	881.8528	881.8528	881.8528	881.8528	881.8528	881.8528	881.8528	881.8528	881.8528	881.8528	881.8528	
27	30.8209	35.3443	40.7096	47.0842	54.6691	63.7058	74.4638	87.5508	102.7231	121.0999	143.0786	169.3740	200.8406	238.4993	283.5688	1185.2566	1185.2566	1185.2566	1185.2566	1185.2566	1185.2566	1185.2566	1185.2566	1185.2566	1185.2566	1185.2566	1185.2566	1185.2566	1185.2566	
28	32.1191	37.0314	42.9309	49.6672	57.8067	67.9067	80.6678	95.7008	112.6033	131.9099	154.1538	181.6068	214.5828	258.5534	312.0937	1777.1697	1777.1697	1777.1697	1777.1697	1777.1697	1777.1697	1777.1697	1777.1697	1777.1697	1777.1697	1777.1697	1777.1697	1777.1697	1777.1697	
29	33.4504	38.7922	45.2189	52.9653	62.5227	73.6398	87.3465	103.9659	124.1354	148.6309	178.3972	214.5828	258.5534	312.0937	377.1697	984.0680	984.0680	984.0680	984.0680	984.0680	984.0680	984.0680	984.0680	984.0680	984.0680	984.0680	984.0680	984.0680	984.0680	
30	34.7839	40.5681	47.3561	55.0833	65.0833	76.8038	91.3608	108.9738	129.8504	154.5054	183.5004	216.3900	259.7900	313.2900	377.1697	1185.2566	1185.2566	1185.2566	1185.2566	1185.2566	1185.2566	1185.2566	1185.2566	1185.2566	1185.2566	1185.2566	1185.2566	1185.2566	1185.2566	

Table 4: Present value of an annuity of R1 per period for n periods

0	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	0.8623
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	0.8623
2	0.9804	0.9615	0.9434	0.9259	0.9091	0.8929	0.8772	0.8623	0.8475	0.8329	0.8185	0.8043	0.7902	0.7763	0.7625	0.7489
3	0.9709	0.9434	0.9174	0.8929	0.8696	0.8475	0.8259	0.8043	0.7829	0.7617	0.7407	0.7200	0.6995	0.6793	0.6593	0.6395
4	0.9615	0.9259	0.8929	0.8623	0.8329	0.8043	0.7763	0.7489	0.7220	0.6955	0.6695	0.6440	0.6190	0.5945	0.5705	0.5470
5	0.9524	0.9174	0.8850	0.8543	0.8259	0.7995	0.7745	0.7500	0.7260	0.7025	0.6795	0.6570	0.6350	0.6135	0.5925	0.5720
6	0.9434	0.9091	0.8772	0.8475	0.8185	0.7902	0.7625	0.7353	0.7085	0.6822	0.6565	0.6313	0.6065	0.5822	0.5584	0.5351
7	0.9346	0.8929	0.8623	0.8329	0.8043	0.7763	0.7489	0.7220	0.6955	0.6695	0.6440	0.6190	0.5945	0.5705	0.5470	0.5240
8	0.9259	0.8850	0.8543	0.8259	0.7995	0.7745	0.7500	0.7260	0.7025	0.6795	0.6570	0.6350	0.6135	0.5925	0.5720	0.5520
9	0.9174	0.8772	0.8475	0.8185	0.7902	0.7625	0.7353	0.7085	0.6822	0.6565	0.6313	0.6065	0.5822	0.5584	0.5351	0.5125
10	0.9091	0.8696	0.8399	0.8111	0.7832	0.7563	0.7303	0.7052	0.6809	0.6574	0.6347	0.6128	0.5916	0.5711	0.5512	0.5318
11	0.9009	0.8615	0.8318	0.8030	0.7751	0.7481	0.7220	0.6967	0.6722	0.6485	0.6256	0.6034	0.5819	0.5611	0.5409	0.5213
12	0.8929	0.8534	0.8237	0.7949	0.7670	0.7400	0.7139	0.6886	0.6641	0.6403	0.6172	0.5948	0.5731	0.5521	0.5317	0.5119
13	0.8850	0.8455	0.8158	0.7870	0.7591	0.7321	0.7060	0.6807	0.6562	0.6324	0.6093	0.5869	0.5652	0.5442	0.5238	0.5040
14	0.8772	0.8377	0.8080	0.7792	0.7513	0.7243	0.6982	0.6729	0.6484	0.6247	0.6017	0.5793	0.5576	0.5365	0.5160	0.4961
15	0.8696	0.8301	0.8004	0.7716	0.7437	0.7167	0.6906	0.6653	0.6408	0.6171	0.5941	0.5717	0.5499	0.5287	0.5081	0.4881
16	0.8623	0.8228	0.7931	0.7643	0.7364	0.7094	0.6833	0.6580	0.6335	0.6098	0.5868	0.5644	0.5426	0.5213	0.5005	0.4803
17	0.8543	0.8148	0.7851	0.7563	0.7284	0.7014	0.6753	0.6499	0.6254	0.6017	0.5787	0.5563	0.5345	0.5132	0.4924	0.4721
18	0.8475	0.8080	0.7783	0.7495	0.7216	0.6946	0.6685	0.6431	0.6185	0.5947	0.5717	0.5493	0.5275	0.5062	0.4854	0.4651
19	0.8407	0.8012	0.7715	0.7427	0.7148	0.6878	0.6617	0.6363	0.6117	0.5878	0.5647	0.5422	0.5203	0.4989	0.4780	0.4576
20	0.8340	0.7945	0.7648	0.7360	0.7081	0.6811	0.6550	0.6296	0.6049	0.5809	0.5577	0.5351	0.5131	0.4916	0.4705	0.4500
21	0.8272	0.7877	0.7580	0.7292	0.7013	0.6743	0.6482	0.6228	0.5981	0.5741	0.5508	0.5281	0.5060	0.4844	0.4632	0.4425
22	0.8204	0.7809	0.7512	0.7224	0.6945	0.6675	0.6414	0.6159	0.5912	0.5672	0.5439	0.5212	0.4990	0.4773	0.4560	0.4352
23	0.8136	0.7741	0.7444	0.7156	0.6877	0.6607	0.6346	0.6091	0.5843	0.5602	0.5368	0.5140	0.4917	0.4698	0.4484	0.4275
24	0.8068	0.7673	0.7376	0.7088	0.6809	0.6539	0.6278	0.6023	0.5775	0.5534	0.5299	0.5070	0.4846	0.4626	0.4410	0.4200
25	0.8000	0.7605	0.7308	0.7020	0.6741	0.6471	0.6210	0.5955	0.5707	0.5466	0.5231	0.5001	0.4776	0.4555	0.4338	0.4125
26	0.7932	0.7537	0.7240	0.6952	0.6673	0.6403	0.6142	0.5887	0.5638	0.5396	0.5161	0.4931	0.4705	0.4483	0.4265	0.4051
27	0.7864	0.7469	0.7172	0.6884	0.6605	0.6335	0.6074	0.5819	0.5570	0.5328	0.5092	0.4861	0.4634	0.4410	0.4190	0.3974
28	0.7796	0.7401	0.7104	0.6816	0.6537	0.6267	0.6006	0.5751	0.5501	0.5258	0.5021	0.4789	0.4561	0.4336	0.4114	0.3897
29	0.7728	0.7333	0.7036	0.6748	0.6469	0.6199	0.5938	0.5683	0.5433	0.5189	0.4951	0.4717	0.4487	0.4260	0.4036	0.3819
30	0.7660	0.7265	0.6968	0.6680	0.6401	0.6131	0.5870	0.5615	0.5365	0.5121	0.4882	0.4647	0.4415	0.4186	0.3960	0.3743