

Table 1: Future Value of 1

(n) Periods	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	1.01000	1.02000	1.03000	1.04000	1.05000	1.06000	1.07000	1.08000	1.09000	1.10000
2	1.02010	1.04040	1.06090	1.08160	1.10250	1.12360	1.14490	1.16640	1.18810	1.21000
3	1.03030	1.06121	1.09273	1.12486	1.15763	1.19102	1.22504	1.25971	1.29503	1.33100
4	1.04060	1.08243	1.12551	1.16986	1.21551	1.26248	1.31080	1.36049	1.41158	1.46410
5	1.05101	1.10408	1.15927	1.21665	1.27628	1.33823	1.40255	1.46933	1.53862	1.61051
6	1.06152	1.12616	1.19405	1.26532	1.34010	1.41852	1.50073	1.58687	1.67710	1.77156
7	1.07214	1.14869	1.22987	1.31593	1.40710	1.50363	1.60578	1.71382	1.82804	1.94872
8	1.08286	1.17166	1.26677	1.36857	1.47746	1.59385	1.71819	1.85093	1.99256	2.14359
9	1.09369	1.19509	1.30477	1.42331	1.55133	1.68948	1.83846	1.99900	2.17189	2.35795
10	1.10462	1.21899	1.34392	1.48024	1.62889	1.79085	1.96715	2.15892	2.36736	2.59374
11	1.11567	1.24337	1.38423	1.53945	1.71034	1.89830	2.10485	2.33164	2.58043	2.85312
12	1.12683	1.26824	1.42576	1.60103	1.79586	2.01220	2.25219	2.51817	2.81266	3.13843
13	1.13809	1.29361	1.46853	1.66507	1.88565	2.13293	2.40985	2.71962	3.06580	3.45227
14	1.14947	1.31948	1.51259	1.73168	1.97993	2.26090	2.57853	2.93719	3.34173	3.79750
15	1.16097	1.34587	1.55797	1.80094	2.07893	2.39656	2.75903	3.17217	3.64248	4.17725
16	1.17258	1.37279	1.60471	1.87298	2.18287	2.54035	2.95216	3.42594	3.97031	4.59497
17	1.18430	1.40024	1.65285	1.94790	2.29202	2.69277	3.15882	3.70002	4.32763	5.05447
18	1.19615	1.42825	1.70243	2.02582	2.40662	2.85434	3.37993	3.99602	4.71712	5.55992
19	1.20811	1.45681	1.75351	2.10685	2.52695	3.02560	3.61653	4.31570	5.14166	6.11591
20	1.22019	1.48595	1.80611	2.19112	2.65330	3.20714	3.86968	4.66096	5.60441	6.72750
21	1.23239	1.51567	1.86029	2.27877	2.78596	3.39956	4.14056	5.03383	6.10881	7.40025
22	1.24472	1.54598	1.91610	2.36992	2.92526	3.60354	4.43040	5.43654	6.65860	8.14027
23	1.25716	1.57690	1.97359	2.46472	3.07152	3.81975	4.74053	5.87146	7.25787	8.95430
24	1.26973	1.60844	2.03279	2.56330	3.22510	4.04893	5.07237	6.34118	7.91108	9.84973
25	1.28243	1.64061	2.09378	2.66584	3.38635	4.29187	5.42743	6.84848	8.62308	10.83471
26	1.29526	1.67342	2.15659	2.77247	3.55567	4.54938	5.80735	7.39635	9.39916	11.91818
27	1.30821	1.70689	2.22129	2.88337	3.73346	4.82235	6.21387	7.98806	10.24508	13.10999
28	1.32129	1.74102	2.28793	2.99870	3.92013	5.11169	6.64884	8.62711	11.16714	14.42099
29	1.33450	1.77584	2.35657	3.11865	4.11614	5.41839	7.11426	9.31727	12.17218	15.86309
30	1.34785	1.81136	2.42726	3.24340	4.32194	5.74349	7.61226	10.06266	13.26768	17.44940
31	1.36133	1.84759	2.50008	3.37313	4.53804	6.08810	8.14511	10.86767	14.46177	19.19434
32	1.37494	1.88454	2.57508	3.50806	4.76494	6.45339	8.71527	11.73708	15.76333	21.11378
33	1.38869	1.92223	2.65234	3.64838	5.00319	6.84059	9.32534	12.67605	17.18203	23.22515
34	1.40258	1.96068	2.73191	3.79432	5.25335	7.25103	9.97811	13.69013	18.72841	25.54767
35	1.41660	1.99989	2.81386	3.94609	5.51602	7.68609	10.67658	14.78534	20.41397	28.10244
36	1.43077	2.03989	2.89828	4.10393	5.79182	8.14725	11.42394	15.96817	22.25123	30.91268
37	1.44508	2.08069	2.98523	4.26809	6.08141	8.63609	12.22362	17.24563	24.25384	34.00395
38	1.45953	2.12230	3.07478	4.43881	6.38548	9.15425	13.07927	18.62528	26.43668	37.40434
39	1.47412	2.16474	3.16703	4.61637	6.70475	9.70351	13.99482	20.11530	28.81598	41.14478
40	1.48886	2.20804	3.26204	4.80102	7.03999	10.28572	14.97446	21.72452	31.40942	45.25926
41	1.50375	2.25220	3.35990	4.99306	7.39199	10.90286	16.02267	23.46248	34.23627	49.78518
42	1.51879	2.29724	3.46070	5.19278	7.76159	11.55703	17.14426	25.33948	37.31753	54.76370
43	1.53398	2.34319	3.56452	5.40050	8.14967	12.25045	18.34435	27.36664	40.67611	60.24007
44	1.54932	2.39005	3.67145	5.61652	8.55715	12.98548	19.62846	29.55597	44.33696	66.26408
45	1.56481	2.43785	3.78160	5.84118	8.98501	13.76461	21.00245	31.92045	48.32729	72.89048
46	1.58046	2.48661	3.89504	6.07482	9.43426	14.59049	22.47262	34.47409	52.67674	80.17953
47	1.59626	2.53634	4.01190	6.31782	9.90597	15.46592	24.04571	37.23201	57.41765	88.19749
48	1.61223	2.58707	4.13225	6.57053	10.40127	16.39387	25.72891	40.21057	62.58524	97.01723
49	1.62835	2.63881	4.25622	6.83335	10.92133	17.37750	27.52993	43.42742	68.21791	106.71896
50	1.64463	2.69159	4.38391	7.10668	11.46740	18.42015	29.45703	46.90161	74.35752	117.39085

Table 1: Future Value of 1

(n) Periods	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	1.11000	1.12000	1.13000	1.14000	1.15000	1.16000	1.17000	1.18000	1.19000	1.20000
2	1.23210	1.25440	1.27690	1.29960	1.32250	1.34560	1.36890	1.39240	1.41610	1.44000
3	1.36763	1.40493	1.44290	1.48154	1.52088	1.56090	1.60161	1.64303	1.68516	1.72800
4	1.51807	1.57352	1.63047	1.68896	1.74901	1.81064	1.87389	1.93878	2.00534	2.07360
5	1.68506	1.76234	1.84244	1.92541	2.01136	2.10034	2.19245	2.28776	2.38635	2.48832
6	1.87041	1.97382	2.08195	2.19497	2.31306	2.43640	2.56516	2.69955	2.83976	2.98598
7	2.07616	2.21068	2.35261	2.50227	2.66002	2.82622	3.00124	3.18547	3.37932	3.58318
8	2.30454	2.47596	2.65844	2.85259	3.05902	3.27841	3.51145	3.75886	4.02139	4.29982
9	2.55804	2.77308	3.00404	3.25195	3.51788	3.80296	4.10840	4.43545	4.78545	5.15978
10	2.83942	3.10585	3.39457	3.70722	4.04556	4.41144	4.80683	5.23384	5.69468	6.19174
11	3.15176	3.47855	3.83586	4.22623	4.65239	5.11726	5.62399	6.17593	6.77667	7.43008
12	3.49845	3.89598	4.33452	4.81790	5.35025	5.93603	6.58007	7.28759	8.06424	8.91610
13	3.88328	4.36349	4.89801	5.49241	6.15279	6.88579	7.69868	8.59936	9.59645	10.69932
14	4.31044	4.88711	5.53475	6.26135	7.07571	7.98752	9.00745	10.14724	11.41977	12.83918
15	4.78459	5.47357	6.25427	7.13794	8.13706	9.26552	10.53872	11.97375	13.58953	15.40702
16	5.31089	6.13039	7.06733	8.13725	9.35762	10.74800	12.33030	14.12902	16.17154	18.48843
17	5.89509	6.86604	7.98608	9.27646	10.76126	12.46768	14.42646	16.67225	19.24413	22.18611
18	6.54355	7.68997	9.02427	10.57517	12.37545	14.46251	16.87895	19.67325	22.90052	26.62333
19	7.26334	8.61276	10.19742	12.05569	14.23177	16.77652	19.74838	23.21444	27.25162	31.94800
20	8.06231	9.64629	11.52309	13.74349	16.36654	19.46076	23.10560	27.39303	32.42942	38.33760
21	8.94917	10.80385	13.02109	15.66758	18.82152	22.57448	27.03355	32.32378	38.59101	46.00512
22	9.93357	12.10031	14.71383	17.86104	21.64475	26.18640	31.62925	38.14206	45.92331	55.20614
23	11.02627	13.55235	16.62663	20.36158	24.89146	30.37622	37.00623	45.00763	54.64873	66.24737
24	12.23916	15.17863	18.78809	23.21221	28.62518	35.23642	43.29729	53.10901	65.03199	79.49685
25	13.58546	17.00006	21.23054	26.46192	32.91895	40.87424	50.65783	62.66863	77.38807	95.39622
26	15.07986	19.04007	23.99051	30.16658	37.85680	47.41412	59.26966	73.94898	92.09181	114.47546
27	16.73865	21.32488	27.10928	34.38991	43.53531	55.00038	69.34550	87.25980	109.58925	137.37055
28	18.57990	23.88387	30.63349	39.20449	50.06561	63.80044	81.13423	102.96656	130.41121	164.84466
29	20.62369	26.74993	34.61584	44.69312	57.57545	74.00851	94.92705	121.50054	155.18934	197.81359
30	22.89230	29.95992	39.11590	50.95016	66.21177	85.84988	111.06465	143.37064	184.67531	237.37631
31	25.41045	33.55511	44.20096	58.08318	76.14354	99.58586	129.94564	169.17735	219.76362	284.85158
32	28.20560	37.58173	49.94709	66.21483	87.56507	115.51959	152.03640	199.62928	261.51871	341.82189
33	31.30821	42.09153	56.44021	75.48490	100.69983	134.00273	177.88259	235.56255	311.20726	410.18627
34	34.75212	47.14252	63.77744	86.05279	115.80480	155.44317	208.12263	277.96381	370.33664	492.22352
35	38.57485	52.79962	72.06851	98.10018	133.17552	180.31407	243.50347	327.99729	440.70061	590.66823
36	42.81808	59.13557	81.43741	111.83420	153.15185	209.16432	284.89906	387.03680	524.43372	708.80187
37	47.52807	66.23184	92.02428	127.49099	176.12463	242.63062	333.33191	456.70343	624.07613	850.56225
38	52.75616	74.17966	103.98743	145.33973	202.54332	281.45151	389.99833	538.91004	742.65059	1020.67470
39	58.55934	83.08122	117.50580	165.68729	232.92482	326.48376	456.29805	635.91385	883.75421	1224.80964
40	65.00087	93.05097	132.78155	188.88351	267.86355	378.72116	533.86871	750.37834	1051.66751	1469.77157
41	72.15096	104.21709	150.04315	215.32721	308.04308	439.31654	624.62639	885.44645	1251.48433	1763.72588
42	80.08757	116.72314	169.54876	245.47301	354.24954	509.60719	730.81288	1044.82681	1489.26636	2116.47106
43	88.89720	130.72991	191.59010	279.83924	407.38697	591.14434	855.05107	1232.89563	1772.22696	2539.76527
44	98.67589	146.41750	216.49682	319.01673	468.49502	685.72744	1000.40975	1454.81685	2108.95009	3047.71832
45	109.53024	163.98760	244.64140	363.67907	538.76927	795.44383	1170.47941	1716.68388	2509.65060	3657.26199
46	121.57857	183.66612	276.44478	414.59414	619.58466	922.71484	1369.46091	2025.68698	2986.48422	4388.71439
47	134.95221	205.70605	312.38261	472.63732	712.52236	1070.34921	1602.26927	2390.31063	3553.91622	5266.45726
48	149.79695	230.39078	352.99234	538.80655	819.40071	1241.60509	1874.65504	2820.56655	4229.16030	6319.74872
49	166.27462	258.03767	398.88135	614.23946	942.31082	1440.26190	2193.34640	3328.26853	5032.70076	7583.69846
50	184.56483	289.00219	450.73593	700.23299	1083.65744	1670.70380	2566.21528	3927.35686	5988.91390	9100.43815

Table 2: Future Value of an Ordinary Annuity of 1

(n) Periods	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
2	2.01000	2.02000	2.03000	2.04000	2.05000	2.06000	2.07000	2.08000	2.09000	2.10000
3	3.03010	3.06040	3.09090	3.12160	3.15250	3.18360	3.21490	3.24640	3.27810	3.31000
4	4.06040	4.12161	4.18363	4.24646	4.31013	4.37462	4.43994	4.50611	4.57313	4.64100
5	5.10101	5.20404	5.30914	5.41632	5.52563	5.63709	5.75074	5.86660	5.98471	6.10510
6	6.15202	6.30812	6.46841	6.63298	6.80191	6.97532	7.15329	7.33593	7.52333	7.71561
7	7.21354	7.43428	7.66246	7.89829	8.14201	8.39384	8.65402	8.92280	9.20043	9.48717
8	8.28567	8.58297	8.89234	9.21423	9.54911	9.89747	10.25980	10.63663	11.02847	11.43589
9	9.36853	9.75463	10.15911	10.58280	11.02656	11.49132	11.97799	12.48756	13.02104	13.57948
10	10.46221	10.94972	11.46388	12.00611	12.57789	13.18079	13.81645	14.48656	15.19293	15.93742
11	11.56683	12.16872	12.80780	13.48635	14.20679	14.97164	15.78360	16.64549	17.56029	18.53117
12	12.68250	13.41209	14.19203	15.02581	15.91713	16.86994	17.88845	18.97713	20.14072	21.38428
13	13.80933	14.68033	15.61779	16.62684	17.71298	18.88214	20.14064	21.49530	22.95338	24.52271
14	14.94742	15.97394	17.08632	18.29191	19.59863	21.01507	22.55049	24.21492	26.01919	27.97498
15	16.09690	17.29342	18.59891	20.02359	21.57856	23.27597	25.12902	27.15211	29.36092	31.77248
16	17.25786	18.63929	20.15688	21.82453	23.65749	25.67253	27.88805	30.32428	33.00340	35.94973
17	18.43044	20.01207	21.76159	23.69751	25.84037	28.21288	30.84022	33.75023	36.97370	40.54470
18	19.61475	21.41231	23.41444	25.64541	28.13238	30.90565	33.99903	37.45024	41.30134	45.59917
19	20.81090	22.84056	25.11687	27.67123	30.53900	33.75999	37.37896	41.44626	46.01846	51.15909
20	22.01900	24.29737	26.87037	29.77808	33.06595	36.78559	40.99549	45.76196	51.16012	57.27500
21	23.23919	25.78332	28.67649	31.96920	35.71925	39.99273	44.86518	50.42292	56.76453	64.00250
22	24.47159	27.29898	30.53678	34.24797	38.50521	43.39229	49.00574	55.45676	62.87334	71.40275
23	25.71630	28.84496	32.45288	36.61789	41.43048	46.99583	53.43614	60.89330	69.53194	79.54302
24	26.97346	30.42186	34.42647	39.08260	44.50200	50.81558	58.17667	66.76476	76.78981	88.49733
25	28.24320	32.03030	36.45926	41.64591	47.72710	54.86451	63.24904	73.10594	84.70090	98.34706
26	29.52563	33.67091	38.55304	44.31174	51.11345	59.15638	68.67647	79.95442	93.32398	109.18177
27	30.82089	35.34432	40.70963	47.08421	54.66913	63.70577	74.48382	87.35077	102.72313	121.09994
28	32.12910	37.05121	42.93092	49.96758	58.40258	68.52811	80.69769	95.33883	112.96822	134.20994
29	33.45039	38.79223	45.21885	52.96629	62.32271	73.63980	87.34653	103.96594	124.13536	148.63093
30	34.78489	40.56808	47.57542	56.08494	66.43885	79.05819	94.46079	113.28321	136.30754	164.49402
31	36.13274	42.37944	50.00268	59.32834	70.76079	84.80168	102.07304	123.34587	149.57522	181.94342
32	37.49407	44.22703	52.50276	62.70147	75.29883	90.88978	110.21815	134.21354	164.03699	201.13777
33	38.86901	46.11157	55.07784	66.20953	80.06377	97.34316	118.93343	145.95062	179.80032	222.25154
34	40.25770	48.03380	57.73018	69.85791	85.06696	104.18375	128.25876	158.62667	196.98234	245.47670
35	41.66028	49.99448	60.46208	73.65222	90.32031	111.43478	138.23688	172.31680	215.71075	271.02437
36	43.07688	51.99437	63.27594	77.59831	95.83632	119.12087	148.91346	187.10215	236.12472	299.12681
37	44.50765	54.03425	66.17422	81.70225	101.62814	127.26812	160.33740	203.07032	258.37595	330.03949
38	45.95272	56.11494	69.15945	85.97034	107.70955	135.90421	172.56102	220.31595	282.62978	364.04343
39	47.41225	58.23724	72.23423	90.40915	114.09502	145.05846	185.64029	238.94122	309.06646	401.44778
40	48.88637	60.40198	75.40126	95.02552	120.79977	154.76197	199.63511	259.05652	337.88245	442.59256
41	50.37524	62.61002	78.66330	99.82654	127.83976	165.04768	214.60957	280.78104	369.29187	487.85181
42	51.87899	64.86222	82.02320	104.81960	135.23175	175.95054	230.63224	304.24352	403.52813	537.63699
43	53.39778	67.15947	85.48389	110.01238	142.99334	187.50758	247.77650	329.58301	440.84566	592.40069
44	54.93176	69.50266	89.04841	115.41288	151.14301	199.75803	266.12085	356.94965	481.52177	652.64076
45	56.48107	71.89271	92.71986	121.02939	159.70016	212.74351	285.74931	386.50562	525.85873	718.90484
46	58.04589	74.33056	96.50146	126.87057	168.68516	226.50812	306.75176	418.42607	574.18602	791.79532
47	59.62634	76.81718	100.39650	132.94539	178.11942	241.09861	329.22439	452.90015	626.86276	871.97485
48	61.22261	79.35352	104.40840	139.26321	188.02539	256.56453	353.27009	490.13216	684.28041	960.17234
49	62.83483	81.94059	108.54065	145.83373	198.42666	272.95840	378.99900	530.34274	746.86565	1057.18957
50	64.46318	84.57940	112.79687	152.66708	209.34800	290.33590	406.52893	573.77016	815.08356	1163.90853

Table 2: Future Value of an Ordinary Annuity of 1

(n) Periods	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
2	2.11000	2.12000	2.13000	2.14000	2.15000	2.16000	2.17000	2.18000	2.19000	2.20000
3	3.34210	3.37440	3.40690	3.43960	3.47250	3.50560	3.53890	3.57240	3.60610	3.64000
4	4.70973	4.77933	4.84980	4.92114	4.99338	5.06650	5.14051	5.21543	5.29126	5.36800
5	6.22780	6.35285	6.48027	6.61010	6.74238	6.87714	7.01440	7.15421	7.29660	7.44160
6	7.91286	8.11519	8.32271	8.53552	8.75374	8.97748	9.20685	9.44197	9.68295	9.92992
7	9.78327	10.08901	10.40466	10.73049	11.06680	11.41387	11.77201	12.14152	12.52271	12.91590
8	11.85943	12.29969	12.75726	13.23276	13.72682	14.24009	14.77325	15.32700	15.90203	16.49908
9	14.16397	14.77566	15.41571	16.08535	16.78584	17.51851	18.28471	19.08585	19.92341	20.79890
10	16.72201	17.54874	18.41975	19.33730	20.30372	21.32147	22.39311	23.52131	24.70886	25.95868
11	19.56143	20.65458	21.81432	23.04452	24.34928	25.73290	27.19994	28.75514	30.40355	32.15042
12	22.71319	24.13313	25.65018	27.27075	29.00167	30.85017	32.82393	34.93107	37.18022	39.58050
13	26.21164	28.02911	29.98470	32.08865	34.35192	36.78620	39.40399	42.21866	45.24446	48.49660
14	30.09492	32.39260	34.88271	37.58107	40.50471	43.67199	47.10267	50.81802	54.84091	59.19592
15	34.40536	37.27971	40.41746	43.84241	47.58041	51.65951	56.11013	60.96527	66.26068	72.03511
16	39.18995	42.75328	46.67173	50.98035	55.71747	60.92503	66.64885	72.93901	79.85021	87.44213
17	44.50084	48.88367	53.73906	59.11760	65.07509	71.67303	78.97915	87.06804	96.02175	105.93056
18	50.39594	55.74971	61.72514	68.39407	75.83636	84.14072	93.40561	103.74028	115.26588	128.11667
19	56.93949	63.43968	70.74941	78.96923	88.21181	98.60323	110.28456	123.41353	138.16640	154.74000
20	64.20283	72.05244	80.94683	91.02493	102.44358	115.37975	130.03294	146.62797	165.41802	186.68800
21	72.26514	81.69874	92.46992	104.76842	118.81012	134.84051	153.13854	174.02100	197.84744	225.02560
22	81.21431	92.50258	105.49101	120.43600	137.63164	157.41499	180.17209	206.34479	236.43846	271.03072
23	91.14788	104.60289	120.20484	138.29704	159.27638	183.60138	211.80134	244.48685	282.36176	326.23686
24	102.17415	118.15524	136.83147	158.65862	184.16784	213.97761	248.80757	289.49448	337.01050	392.48424
25	114.41331	133.33387	155.61956	181.87083	212.79302	249.21402	292.10486	342.60349	402.04249	471.98108
26	127.99877	150.33393	176.85010	208.33274	245.71197	290.08827	342.76268	405.27211	479.43056	567.37730
27	143.07864	169.37401	200.84061	238.49933	283.56877	337.50239	402.03234	479.22109	571.52237	681.85276
28	159.81729	190.69889	227.94989	272.88923	327.10408	392.50277	471.37783	566.48089	681.11162	819.22331
29	178.39719	214.58275	258.58338	312.09373	377.16969	456.30322	552.51207	669.44745	811.52283	984.06797
30	199.02088	241.33268	293.19922	356.78685	434.74515	530.31173	647.43912	790.94799	966.71217	1181.88157
31	221.91317	271.29261	332.31511	407.73701	500.95692	616.16161	758.50377	934.31863	1151.38748	1419.25788
32	247.32362	304.84772	376.51608	465.82019	577.10046	715.74746	888.44941	1103.49598	1371.15110	1704.10946
33	275.52922	342.42945	426.46317	532.03501	664.66552	831.26706	1040.48581	1303.12526	1632.66981	2045.93135
34	306.83744	384.52098	482.90338	607.51991	765.36535	965.26979	1218.36839	1538.68781	1943.87708	2456.11762
35	341.58955	431.66350	546.68082	693.57270	881.17016	1120.71295	1426.49102	1816.65161	2314.21372	2948.34115
36	380.16441	484.46312	618.74933	791.67288	1014.34568	1301.02703	1669.99450	2144.64890	2754.91433	3539.00937
37	422.98249	543.59869	700.18674	903.50708	1167.49753	1510.19135	1954.89356	2531.68570	3279.34805	4247.81125
38	470.51056	609.83053	792.21101	1030.99808	1343.62216	1752.82197	2288.22547	2988.38913	3903.42418	5098.37350
39	523.26673	684.01020	896.19845	1176.33781	1546.16549	2034.27348	2678.22379	3527.29918	4646.07477	6119.04820
40	581.82607	767.09142	1013.70424	1342.02510	1779.09031	2360.75724	3134.52184	4163.21303	5529.82898	7343.85784
41	646.82693	860.14239	1146.48579	1530.90861	2046.95385	2739.47840	3668.39055	4913.59137	6581.49649	8813.62941
42	718.97790	964.35948	1296.52895	1746.23582	2354.99693	3178.79494	4293.01695	5799.03782	7832.98082	10577.35529
43	799.06547	1081.08262	1466.07771	1991.70883	2709.24647	3688.40213	5023.82983	6843.86463	9322.24718	12693.82635
44	887.96267	1211.81253	1657.66781	2271.54807	3116.63344	4279.54648	5878.88090	8076.76026	11094.47414	15233.59162
45	986.63856	1358.23003	1874.16463	2590.56480	3585.12846	4965.27391	6879.29065	9531.57711	13203.42423	18281.30994
46	1096.16880	1522.21764	2118.80603	2954.24387	4123.89773	5760.71774	8049.77006	11248.26098	15713.07483	21938.57193
47	1217.74737	1705.88375	2395.25082	3368.83801	4743.48239	6683.43257	9419.23097	13273.94796	18699.55905	26327.28631
48	1352.69958	1911.58980	2707.63342	3841.47534	5456.00475	7753.78179	11021.50024	15664.25859	22253.47527	31593.74358
49	1502.49653	2141.98058	3060.62577	4380.28188	6275.40546	8995.38687	12896.15528	18484.82514	26482.63557	37913.49229
50	1668.77115	2400.01825	3459.50712	4994.52135	7217.71628	10435.64877	15089.50167	21813.09367	31515.33633	45497.19075

Table 3: Future Value of an Annuity Due of 1

(n) Periods	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	1.01000	1.02000	1.03000	1.04000	1.05000	1.06000	1.07000	1.08000	1.09000	1.10000
2	2.03010	2.06040	2.09090	2.12160	2.15250	2.18360	2.21490	2.24640	2.27810	2.31000
3	3.06040	3.12161	3.18363	3.24646	3.31013	3.37462	3.43994	3.50611	3.57313	3.64100
4	4.10101	4.20404	4.30914	4.41632	4.52563	4.63709	4.75074	4.86660	4.98471	5.10510
5	5.15202	5.30812	5.46841	5.63298	5.80191	5.97532	6.15329	6.33593	6.52333	6.71561
6	6.21354	6.43428	6.66246	6.89829	7.14201	7.39384	7.65402	7.92280	8.20043	8.48717
7	7.28567	7.58297	7.89234	8.21423	8.54911	8.89747	9.25980	9.63663	10.02847	10.43589
8	8.36853	8.75463	9.15911	9.58280	10.02656	10.49132	10.97799	11.48756	12.02104	12.57948
9	9.46221	9.94972	10.46388	11.00611	11.57789	12.18079	12.81645	13.48656	14.19293	14.93742
10	10.56683	11.16872	11.80780	12.48635	13.20679	13.97164	14.78360	15.64549	16.56029	17.53117
11	11.68250	12.41209	13.19203	14.02581	14.91713	15.86994	16.88845	17.97713	19.14072	20.38428
12	12.80933	13.68033	14.61779	15.62684	16.71298	17.88214	19.14064	20.49530	21.95338	23.52271
13	13.94742	14.97394	16.08632	17.29191	18.59863	20.01507	21.55049	23.21492	25.01919	26.97498
14	15.09690	16.29342	17.59891	19.02359	20.57856	22.27597	24.12902	26.15211	28.36092	30.77248
15	16.25786	17.63929	19.15688	20.82453	22.65749	24.67253	26.88805	29.32428	32.00340	34.94973
16	17.43044	19.01207	20.76159	22.69751	24.84037	27.21288	29.84022	32.75023	35.97370	39.54470
17	18.61475	20.41231	22.41444	24.64541	27.13238	29.90565	32.99903	36.45024	40.30134	44.59917
18	19.81090	21.84056	24.11687	26.67123	29.53900	32.75999	36.37896	40.44626	45.01846	50.15909
19	21.01900	23.29737	25.87037	28.77808	32.06595	35.78559	39.99549	44.76196	50.16012	56.27500
20	22.23919	24.78332	27.67649	30.96920	34.71925	38.99273	43.86518	49.42292	55.76453	63.00250
21	23.47159	26.29898	29.53678	33.24797	37.50521	42.39229	48.00574	54.45676	61.87334	70.40275
22	24.71630	27.84496	31.45288	35.61789	40.43048	45.99583	52.43614	59.89330	68.53194	78.54302
23	25.97346	29.42186	33.42647	38.08260	43.50200	49.81558	57.17667	65.76476	75.78981	87.49733
24	27.24320	31.03030	35.45926	40.64591	46.72710	53.86451	62.24904	72.10594	83.70090	97.34706
25	28.52563	32.67091	37.55304	43.31174	50.11345	58.15638	67.67647	78.95442	92.32398	108.18177
26	29.82089	34.34432	39.70963	46.08421	53.66913	62.70577	73.48382	86.35077	101.72313	120.09994
27	31.12910	36.05121	41.93092	48.96758	57.40258	67.52811	79.69769	94.33883	111.96822	133.20994
28	32.45039	37.79223	44.21885	51.96629	61.32271	72.63980	86.34653	102.96594	123.13536	147.63093
29	33.78489	39.56808	46.57542	55.08494	65.43885	78.05819	93.46079	112.28321	135.30754	163.49402
30	35.13274	41.37944	49.00268	58.32834	69.76079	83.80168	101.07304	122.34587	148.57522	180.94342
31	36.49407	43.22703	51.50276	61.70147	74.29883	89.88978	109.21815	133.21354	163.03699	200.13777
32	37.86901	45.11157	54.07784	65.20953	79.06377	96.34316	117.93343	144.95062	178.80032	221.25154
33	39.25770	47.03380	56.73018	68.85791	84.06696	103.18375	127.25876	157.62667	195.98234	244.47670
34	40.66028	48.99448	59.46208	72.65222	89.32031	110.43478	137.23688	171.31680	214.71075	270.02437
35	42.07688	50.99437	62.27594	76.59831	94.83632	118.12087	147.91346	186.10215	235.12472	298.12681
36	43.50765	53.03425	65.17422	80.70225	100.62814	126.26812	159.33740	202.07032	257.37595	329.03949
37	44.95272	55.11494	68.15945	84.97034	106.70955	134.90421	171.56102	219.31595	281.62978	363.04343
38	46.41225	57.23724	71.23423	89.40915	113.09502	144.05846	184.64029	237.94122	308.06646	400.44778
39	47.88637	59.40198	74.40126	94.02552	119.79977	153.76197	198.63511	258.05652	336.88245	441.59256
40	49.37524	61.61002	77.66330	98.82654	126.83976	164.04768	213.60957	279.78104	368.29187	486.85181
41	50.87899	63.86222	81.02320	103.81960	134.23175	174.95054	229.63224	303.24352	402.52813	536.63699
42	52.39778	66.15947	84.48389	109.01238	141.99334	186.50758	246.77650	328.58301	439.84566	591.40069
43	53.93176	68.50266	88.04841	114.41288	150.14301	198.75803	265.12085	355.94965	480.52177	651.64076
44	55.48107	70.89271	91.71986	120.02939	158.70016	211.74351	284.74931	385.50562	524.85873	717.90484
45	57.04589	73.33056	95.50146	125.87057	167.68516	225.50812	305.75176	417.42607	573.18602	790.79532
46	58.62634	75.81718	99.39650	131.94539	177.11942	240.09861	328.22439	451.90015	625.86276	870.97485
47	60.22261	78.35352	103.40840	138.26321	187.02539	255.56453	352.27009	489.13216	683.28041	959.17234
48	61.83483	80.94059	107.54065	144.83373	197.42666	271.95840	377.99900	529.34274	745.86565	1056.18957
49	63.46318	83.57940	111.79687	151.66708	208.34800	289.33590	405.52893	572.77016	814.08356	1162.90853
50	65.10781	86.27099	116.18077	158.77377	219.81540	307.75606	434.98595	619.67177	888.44108	1280.29938

Table 3: Future Value of an Annuity Due of 1

(n) Periods	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	1.11000	1.12000	1.13000	1.14000	1.15000	1.16000	1.17000	1.18000	1.19000	1.20000
2	2.34210	2.37440	2.40690	2.43960	2.47250	2.50560	2.53890	2.57240	2.60610	2.64000
3	3.70973	3.77933	3.84980	3.92114	3.99338	4.06650	4.14051	4.21543	4.29126	4.36800
4	5.22780	5.35285	5.48027	5.61010	5.74238	5.87714	6.01440	6.15421	6.29660	6.44160
5	6.91286	7.11519	7.32271	7.53552	7.75374	7.97748	8.20685	8.44197	8.68295	8.92992
6	8.78327	9.08901	9.40466	9.73049	10.06680	10.41387	10.77201	11.14152	11.52271	11.91590
7	10.85943	11.29969	11.75726	12.23276	12.72682	13.24009	13.77325	14.32700	14.90203	15.49908
8	13.16397	13.77566	14.41571	15.08535	15.78584	16.51851	17.28471	18.08585	18.92341	19.79890
9	15.72201	16.54874	17.41975	18.33730	19.30372	20.32147	21.39311	22.52131	23.70886	24.95868
10	18.56143	19.65458	20.81432	22.04452	23.34928	24.73290	26.19994	27.75514	29.40355	31.15042
11	21.71319	23.13313	24.65018	26.27075	28.00167	29.85017	31.82393	33.93107	36.18022	38.58050
12	25.21164	27.02911	28.98470	31.08865	33.35192	35.78620	38.40399	41.21866	44.24446	47.49660
13	29.09492	31.39260	33.88271	36.58107	39.50471	42.67199	46.10267	49.81802	53.84091	58.19592
14	33.40536	36.27971	39.41746	42.84241	46.58041	50.65951	55.11013	59.96527	65.26068	71.03511
15	38.18995	41.75328	45.67173	49.98035	54.71747	59.92503	65.64885	71.93901	78.85021	86.44213
16	43.50084	47.88367	52.73906	58.11760	64.07509	70.67303	77.97915	86.06804	95.02175	104.93056
17	49.39594	54.74971	60.72514	67.39407	74.83636	83.14072	92.40561	102.74028	114.26588	127.11667
18	55.93949	62.43968	69.74941	77.96923	87.21181	97.60323	109.28456	122.41353	137.16640	153.74000
19	63.20283	71.05244	79.94683	90.02493	101.44358	114.37975	129.03294	145.62797	164.41802	185.68800
20	71.26514	80.69874	91.46992	103.76842	117.81012	133.84051	152.13854	173.02100	196.84744	224.02560
21	80.21431	91.50258	104.49101	119.43600	136.63164	156.41499	179.17209	205.34479	235.43846	270.03072
22	90.14788	103.60289	119.20484	137.29704	158.27638	182.60138	210.80134	243.48685	281.36176	325.23686
23	101.17415	117.15524	135.83147	157.65862	183.16784	212.97761	247.80757	288.49448	336.01050	391.48424
24	113.41331	132.33387	154.61956	180.87083	211.79302	248.21402	291.10486	341.60349	401.04249	470.98108
25	126.99877	149.33393	175.85010	207.33274	244.71197	289.08827	341.76268	404.27211	478.43056	566.37730
26	142.07864	168.37401	199.84061	237.49933	282.56877	336.50239	401.03234	478.22109	570.52237	680.85276
27	158.81729	189.69889	226.94989	271.88923	326.10408	391.50277	470.37783	565.48089	680.11162	818.22331
28	177.39719	213.58275	257.58338	311.09373	376.16969	455.30322	551.51207	668.44745	810.52283	983.06797
29	198.02088	240.33268	292.19922	355.78685	433.74515	529.31173	646.43912	789.94799	965.71217	1180.88157
30	220.91317	270.29261	331.31511	406.73701	499.95692	615.16161	757.50377	933.31863	1150.38748	1418.25788
31	246.32362	303.84772	375.51608	464.82019	576.10046	714.74746	887.44941	1102.49598	1370.15110	1703.10946
32	274.52922	341.42945	425.46317	531.03501	663.66552	830.26706	1039.48581	1302.12526	1631.66981	2044.93135
33	305.83744	383.52098	481.90338	606.51991	764.36535	964.26979	1217.36839	1537.68781	1942.87708	2455.11762
34	340.58955	430.66350	545.68082	692.57270	880.17016	1119.71295	1425.49102	1815.65161	2313.21372	2947.34115
35	379.16441	483.46312	617.74933	790.67288	1013.34568	1300.02703	1668.99450	2143.64890	2753.91433	3538.00937
36	421.98249	542.59869	699.18674	902.50708	1166.49753	1509.19135	1953.89356	2530.68570	3278.34805	4246.81125
37	469.51056	608.83053	791.21101	1029.99808	1342.62216	1751.82197	2287.22547	2987.38913	3902.42418	5097.37350
38	522.26673	683.01020	895.19845	1175.33781	1545.16549	2033.27348	2677.22379	3526.29918	4645.07477	6118.04820
39	580.82607	766.09142	1012.70424	1341.02510	1778.09031	2359.75724	3133.52184	4162.21303	5528.82898	7342.85784
40	645.82693	859.14239	1145.48579	1529.90861	2045.95385	2738.47840	3667.39055	4912.59137	6580.49649	8812.62941
41	717.97790	963.35948	1295.52895	1745.23582	2353.99693	3177.79494	4292.01695	5798.03782	7831.98082	10576.35529
42	798.06547	1080.08262	1465.07771	1990.70883	2708.24647	3687.40213	5022.82983	6842.86463	9321.24718	12692.82635
43	886.96267	1210.81253	1656.66781	2270.54807	3115.63344	4278.54648	5877.88090	8075.76026	11093.47414	15232.59162
44	985.63856	1357.23003	1873.16463	2589.56480	3584.12846	4964.27391	6878.29065	9530.57711	13202.42423	18280.30994
45	1095.16880	1521.21764	2117.80603	2953.24387	4122.89773	5759.71774	8048.77006	11247.26098	15712.07483	21937.57193
46	1216.74737	1704.88375	2394.25082	3367.83801	4742.48239	6682.43257	9418.23097	13272.94796	18698.55905	26326.28631
47	1351.69958	1910.58980	2706.63342	3840.47534	5455.00475	7752.78179	11020.50024	15663.25859	22252.47527	31592.74358
48	1501.49653	2140.98058	3059.62577	4379.28188	6274.40546	8994.38687	12895.15528	18483.82514	26481.63557	37912.49229
49	1667.77115	2399.01825	3458.50712	4993.52135	7216.71628	10434.64877	15088.50167	21812.09367	31514.33633	45496.19075
50	1852.33598	2688.02044	3909.24304	5693.75433	8300.37372	12105.35258	17654.71696	25739.45053	37503.25023	54596.62890

Table 4: Present Value of 1

(n) Periods	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	0.99010	0.98039	0.97087	0.96154	0.95238	0.94340	0.93458	0.92593	0.91743	0.90909
2	0.98030	0.96117	0.94260	0.92456	0.90703	0.89000	0.87344	0.85734	0.84168	0.82645
3	0.97059	0.94232	0.91514	0.88900	0.86384	0.83962	0.81630	0.79383	0.77218	0.75131
4	0.96098	0.92385	0.88849	0.85480	0.82270	0.79209	0.76290	0.73503	0.70843	0.68301
5	0.95147	0.90573	0.86261	0.82193	0.78353	0.74726	0.71299	0.68058	0.64993	0.62092
6	0.94205	0.88797	0.83748	0.79031	0.74622	0.70496	0.66634	0.63017	0.59627	0.56447
7	0.93272	0.87056	0.81309	0.75992	0.71068	0.66506	0.62275	0.58349	0.54703	0.51316
8	0.92348	0.85349	0.78941	0.73069	0.67684	0.62741	0.58201	0.54027	0.50187	0.46651
9	0.91434	0.83676	0.76642	0.70259	0.64461	0.59190	0.54393	0.50025	0.46043	0.42410
10	0.90529	0.82035	0.74409	0.67556	0.61391	0.55839	0.50835	0.46319	0.42241	0.38554
11	0.89632	0.80426	0.72242	0.64958	0.58468	0.52679	0.47509	0.42888	0.38753	0.35049
12	0.88745	0.78849	0.70138	0.62460	0.55684	0.49697	0.44401	0.39711	0.35553	0.31863
13	0.87866	0.77303	0.68095	0.60057	0.53032	0.46884	0.41496	0.36770	0.32618	0.28966
14	0.86996	0.75788	0.66112	0.57748	0.50507	0.44230	0.38782	0.34046	0.29925	0.26333
15	0.86135	0.74301	0.64186	0.55526	0.48102	0.41727	0.36245	0.31524	0.27454	0.23939
16	0.85282	0.72845	0.62317	0.53391	0.45811	0.39365	0.33873	0.29189	0.25187	0.21763
17	0.84438	0.71416	0.60502	0.51337	0.43630	0.37136	0.31657	0.27027	0.23107	0.19784
18	0.83602	0.70016	0.58739	0.49363	0.41552	0.35034	0.29586	0.25025	0.21199	0.17986
19	0.82774	0.68643	0.57029	0.47464	0.39573	0.33051	0.27651	0.23171	0.19449	0.16351
20	0.81954	0.67297	0.55368	0.45639	0.37689	0.31180	0.25842	0.21455	0.17843	0.14864
21	0.81143	0.65978	0.53755	0.43883	0.35894	0.29416	0.24151	0.19866	0.16370	0.13513
22	0.80340	0.64684	0.52189	0.42196	0.34185	0.27751	0.22571	0.18394	0.15018	0.12285
23	0.79544	0.63416	0.50669	0.40573	0.32557	0.26180	0.21095	0.17032	0.13778	0.11168
24	0.78757	0.62172	0.49193	0.39012	0.31007	0.24698	0.19715	0.15770	0.12640	0.10153
25	0.77977	0.60953	0.47761	0.37512	0.29530	0.23300	0.18425	0.14602	0.11597	0.09230
26	0.77205	0.59758	0.46369	0.36069	0.28124	0.21981	0.17220	0.13520	0.10639	0.08391
27	0.76440	0.58586	0.45019	0.34682	0.26785	0.20737	0.16093	0.12519	0.09761	0.07628
28	0.75684	0.57437	0.43708	0.33348	0.25509	0.19563	0.15040	0.11591	0.08955	0.06934
29	0.74934	0.56311	0.42435	0.32065	0.24295	0.18456	0.14056	0.10733	0.08215	0.06304
30	0.74192	0.55207	0.41199	0.30832	0.23138	0.17411	0.13137	0.09938	0.07537	0.05731
31	0.73458	0.54125	0.39999	0.29646	0.22036	0.16425	0.12277	0.09202	0.06915	0.05210
32	0.72730	0.53063	0.38834	0.28506	0.20987	0.15496	0.11474	0.08520	0.06344	0.04736
33	0.72010	0.52023	0.37703	0.27409	0.19987	0.14619	0.10723	0.07889	0.05820	0.04306
34	0.71297	0.51003	0.36604	0.26355	0.19035	0.13791	0.10022	0.07305	0.05339	0.03914
35	0.70591	0.50003	0.35538	0.25342	0.18129	0.13011	0.09366	0.06763	0.04899	0.03558
36	0.69892	0.49022	0.34503	0.24367	0.17266	0.12274	0.08754	0.06262	0.04494	0.03235
37	0.69200	0.48061	0.33498	0.23430	0.16444	0.11579	0.08181	0.05799	0.04123	0.02941
38	0.68515	0.47119	0.32523	0.22529	0.15661	0.10924	0.07646	0.05369	0.03783	0.02673
39	0.67837	0.46195	0.31575	0.21662	0.14915	0.10306	0.07146	0.04971	0.03470	0.02430
40	0.67165	0.45289	0.30656	0.20829	0.14205	0.09722	0.06678	0.04603	0.03184	0.02209
41	0.66500	0.44401	0.29763	0.20028	0.13528	0.09172	0.06241	0.04262	0.02921	0.02009
42	0.65842	0.43530	0.28896	0.19257	0.12884	0.08653	0.05833	0.03946	0.02680	0.01826
43	0.65190	0.42677	0.28054	0.18517	0.12270	0.08163	0.05451	0.03654	0.02458	0.01660
44	0.64545	0.41840	0.27237	0.17805	0.11686	0.07701	0.05095	0.03383	0.02255	0.01509
45	0.63905	0.41020	0.26444	0.17120	0.11130	0.07265	0.04761	0.03133	0.02069	0.01372
46	0.63273	0.40215	0.25674	0.16461	0.10600	0.06854	0.04450	0.02901	0.01898	0.01247
47	0.62646	0.39427	0.24926	0.15828	0.10095	0.06466	0.04159	0.02686	0.01742	0.01134
48	0.62026	0.38654	0.24200	0.15219	0.09614	0.06100	0.03887	0.02487	0.01598	0.01031
49	0.61412	0.37896	0.23495	0.14634	0.09156	0.05755	0.03632	0.02303	0.01466	0.00937
50	0.60804	0.37153	0.22811	0.14071	0.08720	0.05429	0.03395	0.02132	0.01345	0.00852

Table 4: Present Value of 1

(n) Periods	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	0.90090	0.89286	0.88496	0.87719	0.86957	0.86207	0.85470	0.84746	0.84034	0.83333
2	0.81162	0.79719	0.78315	0.76947	0.75614	0.74316	0.73051	0.71818	0.70616	0.69444
3	0.73119	0.71178	0.69305	0.67497	0.65752	0.64066	0.62437	0.60863	0.59342	0.57870
4	0.65873	0.63552	0.61332	0.59208	0.57175	0.55229	0.53365	0.51579	0.49867	0.48225
5	0.59345	0.56743	0.54276	0.51937	0.49718	0.47611	0.45611	0.43711	0.41905	0.40188
6	0.53464	0.50663	0.48032	0.45559	0.43233	0.41044	0.38984	0.37043	0.35214	0.33490
7	0.48166	0.45235	0.42506	0.39964	0.37594	0.35383	0.33320	0.31393	0.29592	0.27908
8	0.43393	0.40388	0.37616	0.35056	0.32690	0.30503	0.28478	0.26604	0.24867	0.23257
9	0.39092	0.36061	0.33288	0.30751	0.28426	0.26295	0.24340	0.22546	0.20897	0.19381
10	0.35218	0.32197	0.29459	0.26974	0.24718	0.22668	0.20804	0.19106	0.17560	0.16151
11	0.31728	0.28748	0.26070	0.23662	0.21494	0.19542	0.17781	0.16192	0.14757	0.13459
12	0.28584	0.25668	0.23071	0.20756	0.18691	0.16846	0.15197	0.13722	0.12400	0.11216
13	0.25751	0.22917	0.20416	0.18207	0.16253	0.14523	0.12989	0.11629	0.10421	0.09346
14	0.23199	0.20462	0.18068	0.15971	0.14133	0.12520	0.11102	0.09855	0.08757	0.07789
15	0.20900	0.18270	0.15989	0.14010	0.12289	0.10793	0.09489	0.08352	0.07359	0.06491
16	0.18829	0.16312	0.14150	0.12289	0.10686	0.09304	0.08110	0.07078	0.06184	0.05409
17	0.16963	0.14564	0.12522	0.10780	0.09293	0.08021	0.06932	0.05998	0.05196	0.04507
18	0.15282	0.13004	0.11081	0.09456	0.08081	0.06914	0.05925	0.05083	0.04367	0.03756
19	0.13768	0.11611	0.09806	0.08295	0.07027	0.05961	0.05064	0.04308	0.03670	0.03130
20	0.12403	0.10367	0.08678	0.07276	0.06110	0.05139	0.04328	0.03651	0.03084	0.02608
21	0.11174	0.09256	0.07680	0.06383	0.05313	0.04430	0.03699	0.03094	0.02591	0.02174
22	0.10067	0.08264	0.06796	0.05599	0.04620	0.03819	0.03162	0.02622	0.02178	0.01811
23	0.09069	0.07379	0.06014	0.04911	0.04017	0.03292	0.02702	0.02222	0.01830	0.01509
24	0.08170	0.06588	0.05323	0.04308	0.03493	0.02838	0.02310	0.01883	0.01538	0.01258
25	0.07361	0.05882	0.04710	0.03779	0.03038	0.02447	0.01974	0.01596	0.01292	0.01048
26	0.06631	0.05252	0.04168	0.03315	0.02642	0.02109	0.01687	0.01352	0.01086	0.00874
27	0.05974	0.04689	0.03689	0.02908	0.02297	0.01818	0.01442	0.01146	0.00912	0.00728
28	0.05382	0.04187	0.03264	0.02551	0.01997	0.01567	0.01233	0.00971	0.00767	0.00607
29	0.04849	0.03738	0.02889	0.02237	0.01737	0.01351	0.01053	0.00823	0.00644	0.00506
30	0.04368	0.03338	0.02557	0.01963	0.01510	0.01165	0.00900	0.00697	0.00541	0.00421
31	0.03935	0.02980	0.02262	0.01722	0.01313	0.01004	0.00770	0.00591	0.00455	0.00351
32	0.03545	0.02661	0.02002	0.01510	0.01142	0.00866	0.00658	0.00501	0.00382	0.00293
33	0.03194	0.02376	0.01772	0.01325	0.00993	0.00746	0.00562	0.00425	0.00321	0.00244
34	0.02878	0.02121	0.01568	0.01162	0.00864	0.00643	0.00480	0.00360	0.00270	0.00203
35	0.02592	0.01894	0.01388	0.01019	0.00751	0.00555	0.00411	0.00305	0.00227	0.00169
36	0.02335	0.01691	0.01228	0.00894	0.00653	0.00478	0.00351	0.00258	0.00191	0.00141
37	0.02104	0.01510	0.01087	0.00784	0.00568	0.00412	0.00300	0.00219	0.00160	0.00118
38	0.01896	0.01348	0.00962	0.00688	0.00494	0.00355	0.00256	0.00186	0.00135	0.00098
39	0.01708	0.01204	0.00851	0.00604	0.00429	0.00306	0.00219	0.00157	0.00113	0.00082
40	0.01538	0.01075	0.00753	0.00529	0.00373	0.00264	0.00187	0.00133	0.00095	0.00068
41	0.01386	0.00960	0.00666	0.00464	0.00325	0.00228	0.00160	0.00113	0.00080	0.00057
42	0.01249	0.00857	0.00590	0.00407	0.00282	0.00196	0.00137	0.00096	0.00067	0.00047
43	0.01125	0.00765	0.00522	0.00357	0.00245	0.00169	0.00117	0.00081	0.00056	0.00039
44	0.01013	0.00683	0.00462	0.00313	0.00213	0.00146	0.00100	0.00069	0.00047	0.00033
45	0.00913	0.00610	0.00409	0.00275	0.00186	0.00126	0.00085	0.00058	0.00040	0.00027
46	0.00823	0.00544	0.00362	0.00241	0.00161	0.00108	0.00073	0.00049	0.00033	0.00023
47	0.00741	0.00486	0.00320	0.00212	0.00140	0.00093	0.00062	0.00042	0.00028	0.00019
48	0.00668	0.00434	0.00283	0.00186	0.00122	0.00081	0.00053	0.00035	0.00024	0.00016
49	0.00601	0.00388	0.00251	0.00163	0.00106	0.00069	0.00046	0.00030	0.00020	0.00013
50	0.00542	0.00346	0.00222	0.00143	0.00092	0.00060	0.00039	0.00025	0.00017	0.00011

Table 5: Present Value of an Ordinary Annuity of 1

(n) Periods	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	0.99010	0.98039	0.97087	0.96154	0.95238	0.94340	0.93458	0.92593	0.91743	0.90909
2	1.97040	1.94156	1.91347	1.88609	1.85941	1.83339	1.80802	1.78326	1.75911	1.73554
3	2.94099	2.88388	2.82861	2.77509	2.72325	2.67301	2.62432	2.57710	2.53129	2.48685
4	3.90197	3.80773	3.71710	3.62990	3.54595	3.46511	3.38721	3.31213	3.23972	3.16987
5	4.85343	4.71346	4.57971	4.45182	4.32948	4.21236	4.10020	3.99271	3.88965	3.79079
6	5.79548	5.60143	5.41719	5.24214	5.07569	4.91732	4.76654	4.62288	4.48592	4.35526
7	6.72819	6.47199	6.23028	6.00205	5.78637	5.58238	5.38929	5.20637	5.03295	4.86842
8	7.65168	7.32548	7.01969	6.73274	6.46321	6.20979	5.97130	5.74664	5.53482	5.33493
9	8.56602	8.16224	7.78611	7.43533	7.10782	6.80169	6.51523	6.24689	5.99525	5.75902
10	9.47130	8.98259	8.53020	8.11090	7.72173	7.36009	7.02358	6.71008	6.41766	6.14457
11	10.36763	9.78685	9.25262	8.76048	8.30641	7.88687	7.49867	7.13896	6.80519	6.49506
12	11.25508	10.57534	9.95400	9.38507	8.86325	8.38384	7.94269	7.53608	7.16073	6.81369
13	12.13374	11.34837	10.63496	9.98565	9.39357	8.85268	8.35765	7.90378	7.48690	7.10336
14	13.00370	12.10625	11.29607	10.56312	9.89864	9.29498	8.74547	8.24424	7.78615	7.36669
15	13.86505	12.84926	11.93794	11.11839	10.37966	9.71225	9.10791	8.55948	8.06069	7.60608
16	14.71787	13.57771	12.56110	11.65230	10.83777	10.10590	9.44665	8.85137	8.31256	7.82371
17	15.56225	14.29187	13.16612	12.16567	11.27407	10.47726	9.76322	9.12164	8.54363	8.02155
18	16.39827	14.99203	13.75351	12.65930	11.68959	10.82760	10.05909	9.37189	8.75563	8.20141
19	17.22601	15.67846	14.32380	13.13394	12.08532	11.15812	10.33560	9.60360	8.95011	8.36492
20	18.04555	16.35143	14.87747	13.59033	12.46221	11.46992	10.59401	9.81815	9.12855	8.51356
21	18.85698	17.01121	15.41502	14.02916	12.82115	11.76408	10.83553	10.01680	9.29224	8.64869
22	19.66038	17.65805	15.93692	14.45112	13.16300	12.04158	11.06124	10.20074	9.44243	8.77154
23	20.45582	18.29220	16.44361	14.85684	13.48857	12.30338	11.27219	10.37106	9.58021	8.88322
24	21.24339	18.91393	16.93554	15.24696	13.79864	12.55036	11.46933	10.52876	9.70661	8.98474
25	22.02316	19.52346	17.41315	15.62208	14.09394	12.78336	11.65358	10.67478	9.82258	9.07704
26	22.79520	20.12104	17.87684	15.98277	14.37519	13.00317	11.82578	10.80998	9.92897	9.16095
27	23.55961	20.70690	18.32703	16.32959	14.64303	13.21053	11.98671	10.93516	10.02658	9.23722
28	24.31644	21.28127	18.76411	16.66306	14.89813	13.40616	12.13711	11.05108	10.11613	9.30657
29	25.06579	21.84438	19.18845	16.98371	15.14107	13.59072	12.27767	11.15841	10.19828	9.36961
30	25.80771	22.39646	19.60044	17.29203	15.37245	13.76483	12.40904	11.25778	10.27365	9.42691
31	26.54229	22.93770	20.00043	17.58849	15.59281	13.92909	12.53181	11.34980	10.34280	9.47901
32	27.26959	23.46833	20.38877	17.87355	15.80268	14.08404	12.64656	11.43500	10.40624	9.52638
33	27.98969	23.98856	20.76579	18.14765	16.00255	14.23023	12.75379	11.51389	10.46444	9.56943
34	28.70267	24.49859	21.13184	18.41120	16.19290	14.36814	12.85401	11.58693	10.51784	9.60857
35	29.40858	24.99862	21.48722	18.66461	16.37419	14.49825	12.94767	11.65457	10.56682	9.64416
36	30.10751	25.48884	21.83225	18.90828	16.54685	14.62099	13.03521	11.71719	10.61176	9.67651
37	30.79951	25.96945	22.16724	19.14258	16.71129	14.73678	13.11702	11.77518	10.65299	9.70592
38	31.48466	26.44064	22.49246	19.36786	16.86789	14.84602	13.19347	11.82887	10.69082	9.73265
39	32.16303	26.90259	22.80822	19.58448	17.01704	14.94907	13.26493	11.87858	10.72552	9.75696
40	32.83469	27.35548	23.11477	19.79277	17.15909	15.04630	13.33171	11.92461	10.75736	9.77905
41	33.49969	27.79949	23.41240	19.99305	17.29437	15.13802	13.39412	11.96723	10.78657	9.79914
42	34.15811	28.23479	23.70136	20.18563	17.42321	15.22454	13.45245	12.00670	10.81337	9.81740
43	34.81001	28.66156	23.98190	20.37079	17.54591	15.30617	13.50696	12.04324	10.83795	9.83400
44	35.45545	29.07996	24.25427	20.54884	17.66277	15.38318	13.55791	12.07707	10.86051	9.84909
45	36.09451	29.49016	24.51871	20.72004	17.77407	15.45583	13.60552	12.10840	10.88120	9.86281
46	36.72724	29.89231	24.77545	20.88465	17.88007	15.52437	13.65002	12.13741	10.90018	9.87528
47	37.35370	30.28658	25.02471	21.04294	17.98102	15.58903	13.69161	12.16427	10.91760	9.88662
48	37.97396	30.67312	25.26671	21.19513	18.07716	15.65003	13.73047	12.18914	10.93358	9.89693
49	38.58808	31.05208	25.50166	21.34147	18.16872	15.70757	13.76680	12.21216	10.94823	9.90630
50	39.19612	31.42361	25.72976	21.48218	18.25593	15.76186	13.80075	12.23348	10.96168	9.91481

Table 5: Present Value of an Ordinary Annuity of 1

(n) Periods	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	0.90090	0.89286	0.88496	0.87719	0.86957	0.86207	0.85470	0.84746	0.84034	0.83333
2	1.71252	1.69005	1.66810	1.64666	1.62571	1.60523	1.58521	1.56564	1.54650	1.52778
3	2.44371	2.40183	2.36115	2.32163	2.28323	2.24589	2.20958	2.17427	2.13992	2.10648
4	3.10245	3.03735	2.97447	2.91371	2.85498	2.79818	2.74324	2.69006	2.63859	2.58873
5	3.69590	3.60478	3.51723	3.43308	3.35216	3.27429	3.19935	3.12717	3.05763	2.99061
6	4.23054	4.11141	3.99755	3.88867	3.78448	3.68474	3.58918	3.49760	3.40978	3.32551
7	4.71220	4.56376	4.42261	4.28830	4.16042	4.03857	3.92238	3.81153	3.70570	3.60459
8	5.14612	4.96764	4.79877	4.63886	4.48732	4.34359	4.20716	4.07757	3.95437	3.83716
9	5.53705	5.32825	5.13166	4.94637	4.77158	4.60654	4.45057	4.30302	4.16333	4.03097
10	5.88923	5.65022	5.42624	5.21612	5.01877	4.83323	4.65860	4.49409	4.33893	4.19247
11	6.20652	5.93770	5.68694	5.45273	5.23371	5.02864	4.83641	4.65601	4.48650	4.32706
12	6.49236	6.19437	5.91765	5.66029	5.42062	5.19711	4.98839	4.79322	4.61050	4.43922
13	6.74987	6.42355	6.12181	5.84236	5.58315	5.34233	5.11828	4.90951	4.71471	4.53268
14	6.98187	6.62817	6.30249	6.00207	5.72448	5.46753	5.22930	5.00806	4.80228	4.61057
15	7.19087	6.81086	6.46238	6.14217	5.84737	5.57546	5.32419	5.09158	4.87586	4.67547
16	7.37916	6.97399	6.60388	6.26506	5.95423	5.66850	5.40529	5.16235	4.93770	4.72956
17	7.54879	7.11963	6.72909	6.37286	6.04716	5.74870	5.47461	5.22233	4.98966	4.77463
18	7.70162	7.24967	6.83991	6.46742	6.12797	5.81785	5.53385	5.27316	5.03333	4.81219
19	7.83929	7.36578	6.93797	6.55037	6.19823	5.87746	5.58449	5.31624	5.07003	4.84350
20	7.96333	7.46944	7.02475	6.62313	6.25933	5.92884	5.62777	5.35275	5.10086	4.86958
21	8.07507	7.56200	7.10155	6.68696	6.31246	5.97314	5.66476	5.38368	5.12677	4.89132
22	8.17574	7.64465	7.16951	6.74294	6.35866	6.01133	5.69637	5.40990	5.14855	4.90943
23	8.26643	7.71843	7.22966	6.79206	6.39884	6.04425	5.72340	5.43212	5.16685	4.92453
24	8.34814	7.78432	7.28288	6.83514	6.43377	6.07263	5.74649	5.45095	5.18223	4.93710
25	8.42174	7.84314	7.32998	6.87293	6.46415	6.09709	5.76623	5.46691	5.19515	4.94759
26	8.48806	7.89566	7.37167	6.90608	6.49056	6.11818	5.78311	5.48043	5.20601	4.95632
27	8.54780	7.94255	7.40856	6.93515	6.51353	6.13636	5.79753	5.49189	5.21513	4.96360
28	8.60162	7.98442	7.44120	6.96066	6.53351	6.15204	5.80985	5.50160	5.22280	4.96967
29	8.65011	8.02181	7.47009	6.98304	6.55088	6.16555	5.82039	5.50983	5.22924	4.97472
30	8.69379	8.05518	7.49565	7.00266	6.56598	6.17720	5.82939	5.51681	5.23466	4.97894
31	8.73315	8.08499	7.51828	7.01988	6.57911	6.18724	5.83709	5.52272	5.23921	4.98245
32	8.76860	8.11159	7.53830	7.03498	6.59053	6.19590	5.84366	5.52773	5.24303	4.98537
33	8.80054	8.13535	7.55602	7.04823	6.60046	6.20336	5.84928	5.53197	5.24625	4.98781
34	8.82932	8.15656	7.57170	7.05985	6.60910	6.20979	5.85409	5.53557	5.24895	4.98984
35	8.85524	8.17550	7.58557	7.07005	6.61661	6.21534	5.85820	5.53862	5.25122	4.99154
36	8.87859	8.19241	7.59785	7.07899	6.62314	6.22012	5.86171	5.54120	5.25312	4.99295
37	8.89963	8.20751	7.60872	7.08683	6.62881	6.22424	5.86471	5.54339	5.25472	4.99412
38	8.91859	8.22099	7.61833	7.09371	6.63375	6.22779	5.86727	5.54525	5.25607	4.99510
39	8.93567	8.23303	7.62684	7.09975	6.63805	6.23086	5.86946	5.54682	5.25720	4.99592
40	8.95105	8.24378	7.63438	7.10504	6.64178	6.23350	5.87133	5.54815	5.25815	4.99660
41	8.96491	8.25337	7.64104	7.10969	6.64502	6.23577	5.87294	5.54928	5.25895	4.99717
42	8.97740	8.26194	7.64694	7.11376	6.64785	6.23774	5.87430	5.55024	5.25962	4.99764
43	8.98865	8.26959	7.65216	7.11733	6.65030	6.23943	5.87547	5.55105	5.26019	4.99803
44	8.99878	8.27642	7.65678	7.12047	6.65244	6.24089	5.87647	5.55174	5.26066	4.99836
45	9.00791	8.28252	7.66086	7.12322	6.65429	6.24214	5.87733	5.55232	5.26106	4.99863
46	9.01614	8.28796	7.66448	7.12563	6.65591	6.24323	5.87806	5.55281	5.26140	4.99886
47	9.02355	8.29282	7.66768	7.12774	6.65731	6.24416	5.87868	5.55323	5.26168	4.99905
48	9.03022	8.29716	7.67052	7.12960	6.65853	6.24497	5.87922	5.55359	5.26191	4.99921
49	9.03624	8.30104	7.67302	7.13123	6.65959	6.24566	5.87967	5.55389	5.26211	4.99934
50	9.04165	8.30450	7.67524	7.13266	6.66051	6.24626	5.88006	5.55414	5.26228	4.99945

Table 6: Present Value of an Annuity Due of 1

(n) Periods	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
2	1.99010	1.98039	1.97087	1.96154	1.95238	1.94340	1.93458	1.92593	1.91743	1.90909
3	2.97040	2.94156	2.91347	2.88609	2.85941	2.83339	2.80802	2.78326	2.75911	2.73554
4	3.94099	3.88388	3.82861	3.77509	3.72325	3.67301	3.62432	3.57710	3.53129	3.48685
5	4.90197	4.80773	4.71710	4.62990	4.54595	4.46511	4.38721	4.31213	4.23972	4.16987
6	5.85343	5.71346	5.57971	5.45182	5.32948	5.21236	5.10020	4.99271	4.88965	4.79079
7	6.79548	6.60143	6.41719	6.24214	6.07569	5.91732	5.76654	5.62288	5.48592	5.35526
8	7.72819	7.47199	7.23028	7.00205	6.78637	6.58238	6.38929	6.20637	6.03295	5.86842
9	8.65168	8.32548	8.01969	7.73274	7.46321	7.20979	6.97130	6.74664	6.53482	6.33493
10	9.56602	9.16224	8.78611	8.43533	8.10782	7.80169	7.51523	7.24689	6.99525	6.75902
11	10.47130	9.98259	9.53020	9.11090	8.72173	8.36009	8.02358	7.71008	7.41766	7.14457
12	11.36763	10.78685	10.25262	9.76048	9.30641	8.88687	8.49867	8.13896	7.80519	7.49506
13	12.25508	11.57534	10.95400	10.38507	9.86325	9.38384	8.94269	8.53608	8.16073	7.81369
14	13.13374	12.34837	11.63496	10.98565	10.39357	9.85268	9.35765	8.90378	8.48690	8.10336
15	14.00370	13.10625	12.29607	11.56312	10.89864	10.29498	9.74547	9.24424	8.78615	8.36669
16	14.86505	13.84926	12.93794	12.11839	11.37966	10.71225	10.10791	9.55948	9.06069	8.60608
17	15.71787	14.57771	13.56110	12.65230	11.83777	11.10590	10.44665	9.85137	9.31256	8.82371
18	16.56225	15.29187	14.16612	13.16567	12.27407	11.47726	10.76322	10.12164	9.54363	9.02155
19	17.39827	15.99203	14.75351	13.65930	12.68959	11.82760	11.05909	10.37189	9.75563	9.20141
20	18.22601	16.67846	15.32380	14.13394	13.08532	12.15812	11.33560	10.60360	9.95011	9.36492
21	19.04555	17.35143	15.87747	14.59033	13.46221	12.46992	11.59401	10.81815	10.12855	9.51356
22	19.85698	18.01121	16.41502	15.02916	13.82115	12.76408	11.83553	11.01680	10.29224	9.64869
23	20.66038	18.65805	16.93692	15.45112	14.16300	13.04158	12.06124	11.20074	10.44243	9.77154
24	21.45582	19.29220	17.44361	15.85684	14.48857	13.30338	12.27219	11.37106	10.58021	9.88322
25	22.24339	19.91393	17.93554	16.24696	14.79864	13.55036	12.46933	11.52876	10.70661	9.98474
26	23.02316	20.52346	18.41315	16.62208	15.09394	13.78336	12.65358	11.67478	10.82258	10.07704
27	23.79520	21.12104	18.87684	16.98277	15.37519	14.00317	12.82578	11.80998	10.92897	10.16095
28	24.55961	21.70690	19.32703	17.32959	15.64303	14.21053	12.98671	11.93516	11.02658	10.23722
29	25.31644	22.28127	19.76411	17.66306	15.89813	14.40616	13.13711	12.05108	11.11613	10.30657
30	26.06579	22.84438	20.18845	17.98371	16.14107	14.59072	13.27767	12.15841	11.19828	10.36961
31	26.80771	23.39646	20.60044	18.29203	16.37245	14.76483	13.40904	12.25778	11.27365	10.42691
32	27.54229	23.93770	21.00043	18.58849	16.59281	14.92909	13.53181	12.34980	11.34280	10.47901
33	28.26959	24.46833	21.38877	18.87355	16.80268	15.08404	13.64656	12.43500	11.40624	10.52638
34	28.98969	24.98856	21.76579	19.14765	17.00255	15.23023	13.75379	12.51389	11.46444	10.56943
35	29.70267	25.49859	22.13184	19.41120	17.19290	15.36814	13.85401	12.58693	11.51784	10.60857
36	30.40858	25.99862	22.48722	19.66461	17.37419	15.49825	13.94767	12.65457	11.56682	10.64416
37	31.10751	26.48884	22.83225	19.90828	17.54685	15.62099	14.03521	12.71719	11.61176	10.67651
38	31.79951	26.96945	23.16724	20.14258	17.71129	15.73678	14.11702	12.77518	11.65299	10.70592
39	32.48466	27.44064	23.49246	20.36786	17.86789	15.84602	14.19347	12.82887	11.69082	10.73265
40	33.16303	27.90259	23.80822	20.58448	18.01704	15.94907	14.26493	12.87858	11.72552	10.75696
41	33.83469	28.35548	24.11477	20.79277	18.15909	16.04630	14.33171	12.92461	11.75736	10.77905
42	34.49969	28.79949	24.41240	20.99305	18.29437	16.13802	14.39412	12.96723	11.78657	10.79914
43	35.15811	29.23479	24.70136	21.18563	18.42321	16.22454	14.45245	13.00670	11.81337	10.81740
44	35.81001	29.66156	24.98190	21.37079	18.54591	16.30617	14.50696	13.04324	11.83795	10.83400
45	36.45545	30.07996	25.25427	21.54884	18.66277	16.38318	14.55791	13.07707	11.86051	10.84909
46	37.09451	30.49016	25.51871	21.72004	18.77407	16.45583	14.60552	13.10840	11.88120	10.86281
47	37.72724	30.89231	25.77545	21.88465	18.88007	16.52437	14.65002	13.13741	11.90018	10.87528
48	38.35370	31.28658	26.02471	22.04294	18.98102	16.58903	14.69161	13.16427	11.91760	10.88662
49	38.97396	31.67312	26.26671	22.19513	19.07716	16.65003	14.73047	13.18914	11.93358	10.89693
50	39.58808	32.05208	26.50166	22.34147	19.16872	16.70757	14.76680	13.21216	11.94823	10.90630

Table 6: Present Value of an Annuity Due of 1

(n) Periods	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
2	1.90090	1.89286	1.88496	1.87719	1.86957	1.86207	1.85470	1.84746	1.84034	1.83333
3	2.71252	2.69005	2.66810	2.64666	2.62571	2.60523	2.58521	2.56564	2.54650	2.52778
4	3.44371	3.40183	3.36115	3.32163	3.28323	3.24589	3.20958	3.17427	3.13992	3.10648
5	4.10245	4.03735	3.97447	3.91371	3.85498	3.79818	3.74324	3.69006	3.63859	3.58873
6	4.69590	4.60478	4.51723	4.43308	4.35216	4.27429	4.19935	4.12717	4.05763	3.99061
7	5.23054	5.11141	4.99755	4.88867	4.78448	4.68474	4.58918	4.49760	4.40978	4.32551
8	5.71220	5.56376	5.42261	5.28830	5.16042	5.03857	4.92238	4.81153	4.70570	4.60459
9	6.14612	5.96764	5.79877	5.63886	5.48732	5.34359	5.20716	5.07757	4.95437	4.83716
10	6.53705	6.32825	6.13166	5.94637	5.77158	5.60654	5.45057	5.30302	5.16333	5.03097
11	6.88923	6.65022	6.42624	6.21612	6.01877	5.83323	5.65860	5.49409	5.33893	5.19247
12	7.20652	6.93770	6.68694	6.45273	6.23371	6.02864	5.83641	5.65601	5.48650	5.32706
13	7.49236	7.19437	6.91765	6.66029	6.42062	6.19711	5.98839	5.79322	5.61050	5.43922
14	7.74987	7.42355	7.12181	6.84236	6.58315	6.34233	6.11828	5.90951	5.71471	5.53268
15	7.98187	7.62817	7.30249	7.00207	6.72448	6.46753	6.22930	6.00806	5.80228	5.61057
16	8.19087	7.81086	7.46238	7.14217	6.84737	6.57546	6.32419	6.09158	5.87586	5.67547
17	8.37916	7.97399	7.60388	7.26506	6.95423	6.66850	6.40529	6.16235	5.93770	5.72956
18	8.54879	8.11963	7.72909	7.37286	7.04716	6.74870	6.47461	6.22233	5.98966	5.77463
19	8.70162	8.24967	7.83991	7.46742	7.12797	6.81785	6.53385	6.27316	6.03333	5.81219
20	8.83929	8.36578	7.93797	7.55037	7.19823	6.87746	6.58449	6.31624	6.07003	5.84350
21	8.96333	8.46944	8.02475	7.62313	7.25933	6.92884	6.62777	6.35275	6.10086	5.86958
22	9.07507	8.56200	8.10155	7.68696	7.31246	6.97314	6.66476	6.38368	6.12677	5.89132
23	9.17574	8.64465	8.16951	7.74294	7.35866	7.01133	6.69637	6.40990	6.14855	5.90943
24	9.26643	8.71843	8.22966	7.79206	7.39884	7.04425	6.72340	6.43212	6.16685	5.92453
25	9.34814	8.78432	8.28288	7.83514	7.43377	7.07263	6.74649	6.45095	6.18223	5.93710
26	9.42174	8.84314	8.32998	7.87293	7.46415	7.09709	6.76623	6.46691	6.19515	5.94759
27	9.48806	8.89566	8.37167	7.90608	7.49056	7.11818	6.78311	6.48043	6.20601	5.95632
28	9.54780	8.94255	8.40856	7.93515	7.51353	7.13636	6.79753	6.49189	6.21513	5.96360
29	9.60162	8.98442	8.44120	7.96066	7.53351	7.15204	6.80985	6.50160	6.22280	5.96967
30	9.65011	9.02181	8.47009	7.98304	7.55088	7.16555	6.82039	6.50983	6.22924	5.97472
31	9.69379	9.05518	8.49565	8.00266	7.56598	7.17720	6.82939	6.51681	6.23466	5.97894
32	9.73315	9.08499	8.51828	8.01988	7.57911	7.18724	6.83709	6.52272	6.23921	5.98245
33	9.76860	9.11159	8.53830	8.03498	7.59053	7.19590	6.84366	6.52773	6.24303	5.98537
34	9.80054	9.13535	8.55602	8.04823	7.60046	7.20336	6.84928	6.53197	6.24625	5.98781
35	9.82932	9.15656	8.57170	8.05985	7.60910	7.20979	6.85409	6.53557	6.24895	5.98984
36	9.85524	9.17550	8.58557	8.07005	7.61661	7.21534	6.85820	6.53862	6.25122	5.99154
37	9.87859	9.19241	8.59785	8.07899	7.62314	7.22012	6.86171	6.54120	6.25312	5.99295
38	9.89963	9.20751	8.60872	8.08683	7.62881	7.22424	6.86471	6.54339	6.25472	5.99412
39	9.91859	9.22099	8.61833	8.09371	7.63375	7.22779	6.86727	6.54525	6.25607	5.99510
40	9.93567	9.23303	8.62684	8.09975	7.63805	7.23086	6.86946	6.54682	6.25720	5.99592
41	9.95105	9.24378	8.63438	8.10504	7.64178	7.23350	6.87133	6.54815	6.25815	5.99660
42	9.96491	9.25337	8.64104	8.10969	7.64502	7.23577	6.87294	6.54928	6.25895	5.99717
43	9.97740	9.26194	8.64694	8.11376	7.64785	7.23774	6.87430	6.55024	6.25962	5.99764
44	9.98865	9.26959	8.65216	8.11733	7.65030	7.23943	6.87547	6.55105	6.26019	5.99803
45	9.99878	9.27642	8.65678	8.12047	7.65244	7.24089	6.87647	6.55174	6.26066	5.99836
46	10.00791	9.28252	8.66086	8.12322	7.65429	7.24214	6.87733	6.55232	6.26106	5.99863
47	10.01614	9.28796	8.66448	8.12563	7.65591	7.24323	6.87806	6.55281	6.26140	5.99886
48	10.02355	9.29282	8.66768	8.12774	7.65731	7.24416	6.87868	6.55323	6.26168	5.99905
49	10.03022	9.29716	8.67052	8.12960	7.65853	7.24497	6.87922	6.55359	6.26191	5.99921
50	10.03624	9.30104	8.67302	8.13123	7.65959	7.24566	6.87967	6.55389	6.26211	5.99934