

Future Value of \$1 (lump sum)

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%
1	1.010	1.020	1.030	1.040	1.050	1.060	1.070	1.080	1.090	1.100	1.110
2	1.020	1.040	1.061	1.082	1.103	1.124	1.145	1.166	1.188	1.210	1.232
3	1.030	1.061	1.093	1.125	1.158	1.191	1.225	1.260	1.295	1.331	1.368
4	1.041	1.082	1.126	1.170	1.216	1.262	1.311	1.360	1.412	1.464	1.518
5	1.051	1.104	1.159	1.217	1.276	1.338	1.403	1.469	1.539	1.611	1.685
6	1.062	1.126	1.194	1.265	1.340	1.419	1.501	1.587	1.677	1.772	1.870
7	1.072	1.149	1.230	1.316	1.407	1.504	1.606	1.714	1.828	1.949	2.076
8	1.083	1.172	1.267	1.369	1.477	1.594	1.718	1.851	1.993	2.144	2.305
9	1.094	1.195	1.305	1.423	1.551	1.689	1.838	1.999	2.172	2.358	2.558
10	1.105	1.219	1.344	1.480	1.629	1.791	1.967	2.159	2.367	2.594	2.839
11	1.116	1.243	1.384	1.539	1.710	1.898	2.105	2.332	2.580	2.853	3.152
12	1.127	1.268	1.426	1.601	1.796	2.012	2.252	2.518	2.813	3.138	3.498
13	1.138	1.294	1.469	1.665	1.886	2.133	2.410	2.720	3.066	3.452	3.883
14	1.149	1.319	1.513	1.732	1.980	2.261	2.579	2.937	3.342	3.797	4.310
15	1.161	1.346	1.558	1.801	2.079	2.397	2.759	3.172	3.642	4.177	4.785
16	1.173	1.373	1.605	1.873	2.183	2.540	2.952	3.426	3.970	4.595	5.311
17	1.184	1.400	1.653	1.948	2.292	2.693	3.159	3.700	4.328	5.054	5.895
18	1.196	1.428	1.702	2.026	2.407	2.854	3.380	3.996	4.717	5.560	6.544
19	1.208	1.457	1.754	2.107	2.527	3.026	3.617	4.316	5.142	6.116	7.263
20	1.220	1.486	1.806	2.191	2.653	3.207	3.870	4.661	5.604	6.727	8.062
21	1.232	1.516	1.860	2.279	2.786	3.400	4.141	5.034	6.109	7.400	8.949
22	1.245	1.546	1.916	2.370	2.925	3.604	4.430	5.437	6.659	8.140	9.934
23	1.257	1.577	1.974	2.465	3.072	3.820	4.741	5.871	7.258	8.954	11.026
24	1.270	1.608	2.033	2.563	3.225	4.049	5.072	6.341	7.911	9.850	12.239
25	1.282	1.641	2.094	2.666	3.386	4.292	5.427	6.848	8.623	10.835	13.585
26	1.295	1.673	2.157	2.772	3.556	4.549	5.807	7.396	9.399	11.918	15.080
27	1.308	1.707	2.221	2.883	3.733	4.822	6.214	7.988	10.245	13.110	16.739
28	1.321	1.741	2.288	2.999	3.920	5.112	6.649	8.627	11.167	14.421	18.580
29	1.335	1.776	2.357	3.119	4.116	5.418	7.114	9.317	12.172	15.863	20.624
30	1.348	1.811	2.427	3.243	4.322	5.743	7.612	10.063	13.268	17.449	22.892
31	1.361	1.848	2.500	3.373	4.538	6.088	8.145	10.868	14.462	19.194	25.410
32	1.375	1.885	2.575	3.508	4.765	6.453	8.715	11.737	15.763	21.114	28.206
33	1.389	1.922	2.652	3.648	5.003	6.841	9.325	12.676	17.182	23.225	31.308
34	1.403	1.961	2.732	3.794	5.253	7.251	9.978	13.690	18.728	25.548	34.752
35	1.417	2.000	2.814	3.946	5.516	7.686	10.677	14.785	20.414	28.102	38.575
36	1.431	2.040	2.898	4.104	5.792	8.147	11.424	15.968	22.251	30.913	42.818
37	1.445	2.081	2.985	4.268	6.081	8.636	12.224	17.246	24.254	34.004	47.528
38	1.460	2.122	3.075	4.439	6.385	9.154	13.079	18.625	26.437	37.404	52.756
39	1.474	2.165	3.167	4.616	6.705	9.704	13.995	20.115	28.816	41.145	58.559
40	1.489	2.208	3.262	4.801	7.040	10.286	14.974	21.725	31.409	45.259	65.001
41	1.504	2.252	3.360	4.993	7.392	10.903	16.023	23.462	34.236	49.785	72.151
42	1.519	2.297	3.461	5.193	7.762	11.557	17.144	25.339	37.318	54.764	80.088
43	1.534	2.343	3.565	5.400	8.150	12.250	18.344	27.367	40.676	60.240	88.897
44	1.549	2.390	3.671	5.617	8.557	12.985	19.628	29.556	44.337	66.264	98.676
45	1.565	2.438	3.782	5.841	8.985	13.765	21.002	31.920	48.327	72.890	109.530
46	1.580	2.487	3.895	6.075	9.434	14.590	22.473	34.474	52.677	80.180	121.579
47	1.596	2.536	4.012	6.318	9.906	15.466	24.046	37.232	57.418	88.197	134.952
48	1.612	2.587	4.132	6.571	10.401	16.394	25.729	40.211	62.585	97.017	149.797
49	1.628	2.639	4.256	6.833	10.921	17.378	27.530	43.427	68.218	106.719	166.275
50	1.645	2.692	4.384	7.107	11.467	18.420	29.457	46.902	74.358	117.391	184.565

Period	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	1.120	1.130	1.140	1.150	1.160	1.170	1.180	1.190	1.200
2	1.254	1.277	1.300	1.323	1.346	1.369	1.392	1.416	1.440
3	1.405	1.443	1.482	1.521	1.561	1.602	1.643	1.685	1.728
4	1.574	1.630	1.689	1.749	1.811	1.874	1.939	2.005	2.074
5	1.762	1.842	1.925	2.011	2.100	2.192	2.288	2.386	2.488
6	1.974	2.082	2.195	2.313	2.436	2.565	2.700	2.840	2.986
7	2.211	2.353	2.502	2.660	2.826	3.001	3.185	3.379	3.583
8	2.476	2.658	2.853	3.059	3.278	3.511	3.759	4.021	4.300
9	2.773	3.004	3.252	3.518	3.803	4.108	4.435	4.785	5.160
10	3.106	3.395	3.707	4.046	4.411	4.807	5.234	5.695	6.192
11	3.479	3.836	4.226	4.652	5.117	5.624	6.176	6.777	7.430
12	3.896	4.335	4.818	5.350	5.936	6.580	7.288	8.064	8.916
13	4.363	4.898	5.492	6.153	6.886	7.699	8.599	9.596	10.699
14	4.887	5.535	6.261	7.076	7.988	9.007	10.147	11.420	12.839
15	5.474	6.254	7.138	8.137	9.266	10.539	11.974	13.590	15.407
16	6.130	7.067	8.137	9.358	10.748	12.330	14.129	16.172	18.488
17	6.866	7.986	9.276	10.761	12.468	14.426	16.672	19.244	22.186
18	7.690	9.024	10.575	12.375	14.463	16.879	19.673	22.901	26.623
19	8.613	10.197	12.056	14.232	16.777	19.748	23.214	27.252	31.948
20	9.646	11.523	13.743	16.367	19.461	23.106	27.393	32.429	38.338
21	10.804	13.021	15.668	18.822	22.574	27.034	32.324	38.591	46.005
22	12.100	14.714	17.861	21.645	26.186	31.629	38.142	45.923	55.206
23	13.552	16.627	20.362	24.891	30.376	37.006	45.008	54.649	66.247
24	15.179	18.788	23.212	28.625	35.236	43.297	53.109	65.032	79.497
25	17.000	21.231	26.462	32.919	40.874	50.658	62.669	77.388	95.396
26	19.040	23.991	30.167	37.857	47.414	59.270	73.949	92.092	114.475
27	21.325	27.109	34.390	43.535	55.000	69.345	87.260	109.589	137.371
28	23.884	30.633	39.204	50.066	63.800	81.134	102.967	130.411	164.845
29	26.750	34.616	44.693	57.575	74.009	94.927	121.501	155.189	197.814
30	29.960	39.116	50.950	66.212	85.850	111.065	143.371	184.675	237.376
31	33.555	44.201	58.083	76.144	99.586	129.946	169.177	219.764	284.852
32	37.582	49.947	66.215	87.565	115.520	152.036	199.629	261.519	341.822
33	42.092	56.440	75.485	100.700	134.003	177.883	235.563	311.207	410.186
34	47.143	63.777	86.053	115.805	155.443	208.123	277.964	370.337	492.224
35	52.800	72.069	98.100	133.176	180.314	243.503	327.997	440.701	590.668
36	59.136	81.437	111.834	153.152	209.164	284.899	387.037	524.434	708.802
37	66.232	92.024	127.491	176.125	242.631	333.332	456.703	624.076	850.562
38	74.180	103.987	145.340	202.543	281.452	389.998	538.910	742.651	1,020.675
39	83.081	117.506	165.687	232.925	326.484	456.298	635.914	883.754	1,224.810
40	93.051	132.782	188.884	267.864	378.721	533.869	750.378	1,051.668	1,469.772
41	104.217	150.043	215.327	308.043	439.317	624.626	885.446	1,251.484	1,763.726
42	116.723	169.549	245.473	354.250	509.607	730.813	1,044.827	1,489.266	2,116.471
43	130.730	191.590	279.839	407.387	591.144	855.051	1,232.896	1,772.227	2,539.765
44	146.418	216.497	319.017	468.495	685.727	1,000.410	1,454.817	2,108.950	3,047.718
45	163.988	244.641	363.679	538.769	795.444	1,170.479	1,716.684	2,509.651	3,657.262
46	183.666	276.445	414.594	619.585	922.715	1,369.461	2,025.687	2,986.484	4,388.714
47	205.706	312.383	472.637	712.522	1,070.349	1,602.269	2,390.311	3,553.916	5,266.457
48	230.391	352.992	538.807	819.401	1,241.605	1,874.655	2,820.567	4,229.160	6,319.749
49	258.038	398.881	614.239	942.311	1,440.262	2,193.346	3,328.269	5,032.701	7,583.698
50	289.002	450.736	700.233	1,083.657	1,670.704	2,566.215	3,927.357	5,988.914	9,100.438

Present Value of \$1

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275
16	0.853	0.728	0.623	0.534	0.458	0.394	0.339	0.292	0.252
17	0.844	0.714	0.605	0.513	0.436	0.371	0.317	0.270	0.231
18	0.836	0.700	0.587	0.494	0.416	0.350	0.296	0.250	0.212
19	0.828	0.686	0.570	0.475	0.396	0.331	0.277	0.232	0.194
20	0.820	0.673	0.554	0.456	0.377	0.312	0.258	0.215	0.178
21	0.811	0.660	0.538	0.439	0.359	0.294	0.242	0.199	0.164
22	0.803	0.647	0.522	0.422	0.342	0.278	0.226	0.184	0.150
23	0.795	0.634	0.507	0.406	0.326	0.262	0.211	0.170	0.138
24	0.788	0.622	0.492	0.390	0.310	0.247	0.197	0.158	0.126
25	0.780	0.610	0.478	0.375	0.295	0.233	0.184	0.146	0.116
26	0.772	0.598	0.464	0.361	0.281	0.220	0.172	0.135	0.106
27	0.764	0.586	0.450	0.347	0.268	0.207	0.161	0.125	0.098
28	0.757	0.574	0.437	0.333	0.255	0.196	0.150	0.116	0.090
29	0.749	0.563	0.424	0.321	0.243	0.185	0.141	0.107	0.082
30	0.742	0.552	0.412	0.308	0.231	0.174	0.131	0.099	0.075
31	0.735	0.541	0.400	0.296	0.220	0.164	0.123	0.092	0.069
32	0.727	0.531	0.388	0.285	0.210	0.155	0.115	0.085	0.063
33	0.720	0.520	0.377	0.274	0.200	0.146	0.107	0.079	0.058
34	0.713	0.510	0.366	0.264	0.190	0.138	0.100	0.073	0.053
35	0.706	0.500	0.355	0.253	0.181	0.130	0.094	0.068	0.049
36	0.699	0.490	0.345	0.244	0.173	0.123	0.088	0.063	0.045
37	0.692	0.481	0.335	0.234	0.164	0.116	0.082	0.058	0.041
38	0.685	0.471	0.325	0.225	0.157	0.109	0.076	0.054	0.038
39	0.678	0.462	0.316	0.217	0.149	0.103	0.071	0.050	0.035
40	0.672	0.453	0.307	0.208	0.142	0.097	0.067	0.046	0.032
41	0.665	0.444	0.298	0.200	0.135	0.092	0.062	0.043	0.029
42	0.658	0.435	0.289	0.193	0.129	0.087	0.058	0.039	0.027
43	0.652	0.427	0.281	0.185	0.123	0.082	0.055	0.037	0.025
44	0.645	0.418	0.272	0.178	0.117	0.077	0.051	0.034	0.023
45	0.639	0.410	0.264	0.171	0.111	0.073	0.048	0.031	0.021
46	0.633	0.402	0.257	0.165	0.106	0.069	0.044	0.029	0.019
47	0.626	0.394	0.249	0.158	0.101	0.065	0.042	0.027	0.017
48	0.620	0.387	0.242	0.152	0.096	0.061	0.039	0.025	0.016
49	0.614	0.379	0.235	0.146	0.092	0.058	0.036	0.023	0.015
50	0.608	0.372	0.228	0.141	0.087	0.054	0.034	0.021	0.013

Period	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	0.909	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833
2	0.826	0.812	0.797	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694
3	0.751	0.731	0.712	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579
4	0.683	0.659	0.636	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482
5	0.621	0.593	0.567	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402
6	0.564	0.535	0.507	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335
7	0.513	0.482	0.452	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279
8	0.467	0.434	0.404	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233
9	0.424	0.391	0.361	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194
10	0.386	0.352	0.322	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162
11	0.350	0.317	0.287	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0.135
12	0.319	0.286	0.257	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0.112
13	0.290	0.258	0.229	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0.093
14	0.263	0.232	0.205	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0.078
15	0.239	0.209	0.183	0.160	0.140	0.123	0.108	0.095	0.084	0.074	0.065
16	0.218	0.188	0.163	0.141	0.123	0.107	0.093	0.081	0.071	0.062	0.054
17	0.198	0.170	0.146	0.125	0.108	0.093	0.080	0.069	0.060	0.052	0.045
18	0.180	0.153	0.130	0.111	0.095	0.081	0.069	0.059	0.051	0.044	0.038
19	0.164	0.138	0.116	0.098	0.083	0.070	0.060	0.051	0.043	0.037	0.031
20	0.149	0.124	0.104	0.087	0.073	0.061	0.051	0.043	0.037	0.031	0.026
21	0.135	0.112	0.093	0.077	0.064	0.053	0.044	0.037	0.031	0.026	0.022
22	0.123	0.101	0.083	0.068	0.056	0.046	0.038	0.032	0.026	0.022	0.018
23	0.112	0.091	0.074	0.060	0.049	0.040	0.033	0.027	0.022	0.018	0.015
24	0.102	0.082	0.066	0.053	0.043	0.035	0.028	0.023	0.019	0.015	0.013
25	0.092	0.074	0.059	0.047	0.038	0.030	0.024	0.020	0.016	0.013	0.010
26	0.084	0.066	0.053	0.042	0.033	0.026	0.021	0.017	0.014	0.011	0.009
27	0.076	0.060	0.047	0.037	0.029	0.023	0.018	0.014	0.011	0.009	0.007
28	0.069	0.054	0.042	0.033	0.026	0.020	0.016	0.012	0.010	0.008	0.006
29	0.063	0.048	0.037	0.029	0.022	0.017	0.014	0.011	0.008	0.006	0.005
30	0.057	0.044	0.033	0.026	0.020	0.015	0.012	0.009	0.007	0.005	0.004
31	0.052	0.039	0.030	0.023	0.017	0.013	0.010	0.008	0.006	0.005	0.004
32	0.047	0.035	0.027	0.020	0.015	0.011	0.009	0.007	0.005	0.004	0.003
33	0.043	0.032	0.024	0.018	0.013	0.010	0.007	0.006	0.004	0.003	0.002
34	0.039	0.029	0.021	0.016	0.012	0.009	0.006	0.005	0.004	0.003	0.002
35	0.036	0.026	0.019	0.014	0.010	0.008	0.006	0.004	0.003	0.002	0.002
36	0.032	0.023	0.017	0.012	0.009	0.007	0.005	0.004	0.003	0.002	0.001
37	0.029	0.021	0.015	0.011	0.008	0.006	0.004	0.003	0.002	0.002	0.001
38	0.027	0.019	0.013	0.010	0.007	0.005	0.004	0.003	0.002	0.001	0.001
39	0.024	0.017	0.012	0.009	0.006	0.004	0.003	0.002	0.002	0.001	0.001
40	0.022	0.015	0.011	0.008	0.005	0.004	0.003	0.002	0.001	0.001	0.001
41	0.020	0.014	0.010	0.007	0.005	0.003	0.002	0.002	0.001	0.001	0.001
42	0.018	0.012	0.009	0.006	0.004	0.003	0.002	0.001	0.001	0.001	0.000
43	0.017	0.011	0.008	0.005	0.004	0.002	0.002	0.001	0.001	0.001	0.000
44	0.015	0.010	0.007	0.005	0.003	0.002	0.001	0.001	0.001	0.000	0.000
45	0.014	0.009	0.006	0.004	0.003	0.002	0.001	0.001	0.001	0.000	0.000
46	0.012	0.008	0.005	0.004	0.002	0.002	0.001	0.001	0.000	0.000	0.000
47	0.011	0.007	0.005	0.003	0.002	0.001	0.001	0.001	0.000	0.000	0.000
48	0.010	0.007	0.004	0.003	0.002	0.001	0.001	0.001	0.000	0.000	0.000
49	0.009	0.006	0.004	0.003	0.002	0.001	0.001	0.000	0.000	0.000	0.000
50	0.009	0.005	0.003	0.002	0.001	0.001	0.001	0.000	0.000	0.000	0.000

Future Value of an Ordinary Annuity of \$1

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	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
3	3.030	3.060	3.091	3.122	3.153	3.184	3.215	3.246	3.278	3.310
4	4.060	4.122	4.184	4.246	4.310	4.375	4.440	4.506	4.573	4.641
5	5.101	5.204	5.309	5.416	5.526	5.637	5.751	5.867	5.985	6.105
6	6.152	6.308	6.468	6.633	6.802	6.975	7.153	7.336	7.523	7.716
7	7.214	7.434	7.662	7.898	8.142	8.394	8.654	8.923	9.200	9.487
8	8.286	8.583	8.892	9.214	9.549	9.897	10.260	10.637	11.028	11.436
9	9.369	9.755	10.159	10.583	11.027	11.491	11.978	12.488	13.021	13.579
10	10.462	10.950	11.464	12.006	12.578	13.181	13.816	14.487	15.193	15.937
11	11.567	12.169	12.808	13.486	14.207	14.972	15.784	16.645	17.560	18.531
12	12.683	13.412	14.192	15.026	15.917	16.870	17.888	18.977	20.141	21.384
13	13.809	14.680	15.618	16.627	17.713	18.882	20.141	21.495	22.953	24.523
14	14.947	15.974	17.086	18.292	19.599	21.015	22.550	24.215	26.019	27.975
15	16.097	17.293	18.599	20.024	21.579	23.276	25.129	27.152	29.361	31.772
16	17.258	18.639	20.157	21.825	23.657	25.673	27.888	30.324	33.003	35.950
17	18.430	20.012	21.762	23.698	25.840	28.213	30.840	33.750	36.974	40.545
18	19.615	21.412	23.414	25.645	28.132	30.906	33.999	37.450	41.301	45.599
19	20.811	22.841	25.117	27.671	30.539	33.760	37.379	41.446	46.018	51.159
20	22.019	24.297	26.870	29.778	33.066	36.786	40.995	45.762	51.160	57.275
21	23.239	25.783	28.676	31.969	35.719	39.993	44.865	50.423	56.765	64.002
22	24.472	27.299	30.537	34.248	38.505	43.392	49.006	55.457	62.873	71.403
23	25.716	28.845	32.453	36.618	41.430	46.996	53.436	60.893	69.532	79.543
24	26.973	30.422	34.426	39.083	44.502	50.816	58.177	66.765	76.790	88.497
25	28.243	32.030	36.459	41.646	47.727	54.865	63.249	73.106	84.701	98.347
26	29.526	33.671	38.553	44.312	51.113	59.156	68.676	79.954	93.324	109.182
27	30.821	35.344	40.710	47.084	54.669	63.706	74.484	87.351	102.723	121.100
28	32.129	37.051	42.931	49.968	58.403	68.528	80.698	95.339	112.968	134.210
29	33.450	38.792	45.219	52.966	62.323	73.640	87.347	103.966	124.135	148.631
30	34.785	40.568	47.575	56.085	66.439	79.058	94.461	113.283	136.308	164.494
31	36.133	42.379	50.003	59.328	70.761	84.802	102.073	123.346	149.575	181.943
32	37.494	44.227	52.503	62.701	75.299	90.890	110.218	134.214	164.037	201.138
33	38.869	46.112	55.078	66.210	80.064	97.343	118.933	145.951	179.800	222.252
34	40.258	48.034	57.730	69.858	85.067	104.184	128.259	158.627	196.982	245.477
35	41.660	49.994	60.462	73.652	90.320	111.435	138.237	172.317	215.711	271.024
36	43.077	51.994	63.276	77.598	95.836	119.121	148.913	187.102	236.125	299.127
37	44.508	54.034	66.174	81.702	101.628	127.268	160.337	203.070	258.376	330.039
38	45.953	56.115	69.159	85.970	107.710	135.904	172.561	220.316	282.630	364.043
39	47.412	58.237	72.234	90.409	114.095	145.058	185.640	238.941	309.066	401.448
40	48.886	60.402	75.401	95.026	120.800	154.762	199.635	259.057	337.882	442.593
41	50.375	62.610	78.663	99.827	127.840	165.048	214.610	280.781	369.292	487.852
42	51.879	64.862	82.023	104.820	135.232	175.951	230.632	304.244	403.528	537.637
43	53.398	67.159	85.484	110.012	142.993	187.508	247.776	329.583	440.846	592.401
44	54.932	69.503	89.048	115.413	151.143	199.758	266.121	356.950	481.522	652.641
45	56.481	71.893	92.720	121.029	159.700	212.744	285.749	386.506	525.859	718.905
46	58.046	74.331	96.501	126.871	168.685	226.508	306.752	418.426	574.186	791.795
47	59.626	76.817	100.397	132.945	178.119	241.099	329.224	452.900	626.863	871.975
48	61.223	79.354	104.408	139.263	188.025	256.565	353.270	490.132	684.280	960.172
49	62.835	81.941	108.541	145.834	198.427	272.958	378.999	530.343	746.866	1,057.190
50	64.463	84.579	112.797	152.667	209.348	290.336	406.529	573.770	815.084	1,163.909

Period	11%	12%	13%	14%	15%	16%	17%
1	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2	2.110	2.120	2.130	2.140	2.150	2.160	2.170
3	3.342	3.374	3.407	3.440	3.473	3.506	3.539
4	4.710	4.779	4.850	4.921	4.993	5.066	5.141
5	6.228	6.353	6.480	6.610	6.742	6.877	7.014
6	7.913	8.115	8.323	8.536	8.754	8.977	9.207
7	9.783	10.089	10.405	10.730	11.067	11.414	11.772
8	11.859	12.300	12.757	13.233	13.727	14.240	14.773
9	14.164	14.776	15.416	16.085	16.786	17.519	18.285
10	16.722	17.549	18.420	19.337	20.304	21.321	22.393
11	19.561	20.655	21.814	23.045	24.349	25.733	27.200
12	22.713	24.133	25.650	27.271	29.002	30.850	32.824
13	26.212	28.029	29.985	32.089	34.352	36.786	39.404
14	30.095	32.393	34.883	37.581	40.505	43.672	47.103
15	34.405	37.280	40.417	43.842	47.580	51.660	56.110
16	39.190	42.753	46.672	50.980	55.717	60.925	66.649
17	44.501	48.884	53.739	59.118	65.075	71.673	78.979
18	50.396	55.750	61.725	68.394	75.836	84.141	93.406
19	56.939	63.440	70.749	78.969	88.212	98.603	110.285
20	64.203	72.052	80.947	91.025	102.444	115.380	130.033
21	72.265	81.699	92.470	104.768	118.810	134.841	153.139
22	81.214	92.503	105.491	120.436	137.632	157.415	180.172
23	91.148	104.603	120.205	138.297	159.276	183.601	211.801
24	102.174	118.155	136.831	158.659	184.168	213.978	248.808
25	114.413	133.334	155.620	181.871	212.793	249.214	292.105
26	127.999	150.334	176.850	208.333	245.712	290.088	342.763
27	143.079	169.374	200.841	238.499	283.569	337.502	402.032
28	159.817	190.699	227.950	272.889	327.104	392.503	471.378
29	178.397	214.583	258.583	312.094	377.170	456.303	552.512
30	199.021	241.333	293.199	356.787	434.745	530.312	647.439
31	221.913	271.293	332.315	407.737	500.957	616.162	758.504
32	247.324	304.848	376.516	465.820	577.100	715.747	888.449
33	275.529	342.429	426.463	532.035	664.666	831.267	1,040.486
34	306.837	384.521	482.903	607.520	765.365	965.270	1,218.368
35	341.590	431.663	546.681	693.573	881.170	1,120.713	1,426.491
36	380.164	484.463	618.749	791.673	1,014.346	1,301.027	1,669.994
37	422.982	543.599	700.187	903.507	1,167.498	1,510.191	1,954.894
38	470.511	609.831	792.211	1,030.998	1,343.622	1,752.822	2,288.225
39	523.267	684.010	896.198	1,176.338	1,546.165	2,034.273	2,678.224
40	581.826	767.091	1,013.704	1,342.025	1,779.090	2,360.757	3,134.522
41	646.827	860.142	1,146.486	1,530.909	2,046.954	2,739.478	3,668.391
42	718.978	964.359	1,296.529	1,746.236	2,354.997	3,178.795	4,293.017
43	799.065	1,081.083	1,466.078	1,991.709	2,709.246	3,688.402	5,023.830
44	887.963	1,211.813	1,657.668	2,271.548	3,116.633	4,279.546	5,878.881
45	986.639	1,358.230	1,874.165	2,590.565	3,585.128	4,965.274	6,879.291
46	1,096.169	1,522.218	2,118.806	2,954.244	4,123.898	5,760.718	8,049.770
47	1,217.747	1,705.884	2,395.251	3,368.838	4,743.482	6,683.433	9,419.231
48	1,352.700	1,911.590	2,707.633	3,841.475	5,456.005	7,753.782	11,021.500
49	1,502.497	2,141.981	3,060.626	4,380.282	6,275.405	8,995.387	12,896.155
50	1,668.771	2,400.018	3,459.507	4,994.521	7,217.716	10,435.649	15,089.502

Period	18%	19%	20%
1	1.000	1.000	1.000
2	2.180	2.190	2.200
3	3.572	3.606	3.640
4	5.215	5.291	5.368
5	7.154	7.297	7.442
6	9.442	9.683	9.930
7	12.142	12.523	12.916
8	15.327	15.902	16.499
9	19.086	19.923	20.799
10	23.521	24.709	25.959
11	28.755	30.404	32.150
12	34.931	37.180	39.581
13	42.219	45.244	48.497
14	50.818	54.841	59.196
15	60.965	66.261	72.035
16	72.939	79.850	87.442
17	87.068	96.022	105.931
18	103.740	115.266	128.117
19	123.414	138.166	154.740
20	146.628	165.418	186.688
21	174.021	197.847	225.026
22	206.345	236.438	271.031
23	244.487	282.362	326.237
24	289.494	337.010	392.484
25	342.603	402.042	471.981
26	405.272	479.431	567.377
27	479.221	571.522	681.853
28	566.481	681.112	819.223
29	669.447	811.523	984.068
30	790.948	966.712	1,181.882
31	934.319	1,151.387	1,419.258
32	1,103.496	1,371.151	1,704.109
33	1,303.125	1,632.670	2,045.931
34	1,538.688	1,943.877	2,456.118
35	1,816.652	2,314.214	2,948.341
36	2,144.649	2,754.914	3,539.009
37	2,531.686	3,279.348	4,247.811
38	2,988.389	3,903.424	5,098.373
39	3,527.299	4,646.075	6,119.048
40	4,163.213	5,529.829	7,343.858
41	4,913.591	6,581.496	8,813.629
42	5,799.038	7,832.981	10,577.355
43	6,843.865	9,322.247	12,693.826
44	8,076.760	11,094.474	15,233.592
45	9,531.577	13,203.424	18,281.310
46	11,248.261	15,713.075	21,938.572
47	13,273.948	18,699.559	26,327.286
48	15,664.259	22,253.475	31,593.744
49	18,484.825	26,482.636	37,913.492
50	21,813.094	31,515.336	45,497.191

Present Value of an Ordinary Annuity of \$1

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909
2	1.970	1.942	1.913	1.886	1.859	1.833	1.808	1.783	1.759	1.736
3	2.941	2.884	2.829	2.775	2.723	2.673	2.624	2.577	2.531	2.487
4	3.902	3.808	3.717	3.630	3.546	3.465	3.387	3.312	3.240	3.170
5	4.853	4.713	4.580	4.452	4.329	4.212	4.100	3.993	3.890	3.791
6	5.795	5.601	5.417	5.242	5.076	4.917	4.767	4.623	4.486	4.355
7	6.728	6.472	6.230	6.002	5.786	5.582	5.389	5.206	5.033	4.868
8	7.652	7.325	7.020	6.733	6.463	6.210	5.971	5.747	5.535	5.335
9	8.566	8.162	7.786	7.435	7.108	6.802	6.515	6.247	5.995	5.759
10	9.471	8.983	8.530	8.111	7.722	7.360	7.024	6.710	6.418	6.145
11	10.368	9.787	9.253	8.760	8.306	7.887	7.499	7.139	6.805	6.495
12	11.255	10.575	9.954	9.385	8.863	8.384	7.943	7.536	7.161	6.814
13	12.134	11.348	10.635	9.986	9.394	8.853	8.358	7.904	7.487	7.103
14	13.004	12.106	11.296	10.563	9.899	9.295	8.745	8.244	7.786	7.367
15	13.865	12.849	11.938	11.118	10.380	9.712	9.108	8.559	8.061	7.606
16	14.718	13.578	12.561	11.652	10.838	10.106	9.447	8.851	8.313	7.824
17	15.562	14.292	13.166	12.166	11.274	10.477	9.763	9.122	8.544	8.022
18	16.398	14.992	13.754	12.659	11.690	10.828	10.059	9.372	8.756	8.201
19	17.226	15.678	14.324	13.134	12.085	11.158	10.336	9.604	8.950	8.365
20	18.046	16.351	14.877	13.590	12.462	11.470	10.594	9.818	9.129	8.514
21	18.857	17.011	15.415	14.029	12.821	11.764	10.836	10.017	9.292	8.649
22	19.660	17.658	15.937	14.451	13.163	12.042	11.061	10.201	9.442	8.772
23	20.456	18.292	16.444	14.857	13.489	12.303	11.272	10.371	9.580	8.883
24	21.243	18.914	16.936	15.247	13.799	12.550	11.469	10.529	9.707	8.985
25	22.023	19.523	17.413	15.622	14.094	12.783	11.654	10.675	9.823	9.077
26	22.795	20.121	17.877	15.983	14.375	13.003	11.826	10.810	9.929	9.161
27	23.560	20.707	18.327	16.330	14.643	13.211	11.987	10.935	10.027	9.237
28	24.316	21.281	18.764	16.663	14.898	13.406	12.137	11.051	10.116	9.307
29	25.066	21.844	19.188	16.984	15.141	13.591	12.278	11.158	10.198	9.370
30	25.808	22.396	19.600	17.292	15.372	13.765	12.409	11.258	10.274	9.427
31	26.542	22.938	20.000	17.588	15.593	13.929	12.532	11.350	10.343	9.479
32	27.270	23.468	20.389	17.874	15.803	14.084	12.647	11.435	10.406	9.526
33	27.990	23.989	20.766	18.148	16.003	14.230	12.754	11.514	10.464	9.569
34	28.703	24.499	21.132	18.411	16.193	14.368	12.854	11.587	10.518	9.609
35	29.409	24.999	21.487	18.665	16.374	14.498	12.948	11.655	10.567	9.644
36	30.108	25.489	21.832	18.908	16.547	14.621	13.035	11.717	10.612	9.677
37	30.800	25.969	22.167	19.143	16.711	14.737	13.117	11.775	10.653	9.706
38	31.485	26.441	22.492	19.368	16.868	14.846	13.193	11.829	10.691	9.733
39	32.163	26.903	22.808	19.584	17.017	14.949	13.265	11.879	10.726	9.757
40	32.835	27.355	23.115	19.793	17.159	15.046	13.332	11.925	10.757	9.779
41	33.500	27.799	23.412	19.993	17.294	15.138	13.394	11.967	10.787	9.799
42	34.158	28.235	23.701	20.186	17.423	15.225	13.452	12.007	10.813	9.817
43	34.810	28.662	23.982	20.371	17.546	15.306	13.507	12.043	10.838	9.834
44	35.455	29.080	24.254	20.549	17.663	15.383	13.558	12.077	10.861	9.849
45	36.095	29.490	24.519	20.720	17.774	15.456	13.606	12.108	10.881	9.863
46	36.727	29.892	24.775	20.885	17.880	15.524	13.650	12.137	10.900	9.875
47	37.354	30.287	25.025	21.043	17.981	15.589	13.692	12.164	10.918	9.887
48	37.974	30.673	25.267	21.195	18.077	15.650	13.730	12.189	10.934	9.897
49	38.588	31.052	25.502	21.341	18.169	15.708	13.767	12.212	10.948	9.906
50	39.196	31.424	25.730	21.482	18.256	15.762	13.801	12.233	10.962	9.915

Period	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833
2	1.713	1.690	1.668	1.647	1.626	1.605	1.585	1.566	1.547	1.528
3	2.444	2.402	2.361	2.322	2.283	2.246	2.210	2.174	2.140	2.106
4	3.102	3.037	2.974	2.914	2.855	2.798	2.743	2.690	2.639	2.589
5	3.696	3.605	3.517	3.433	3.352	3.274	3.199	3.127	3.058	2.991
6	4.231	4.111	3.998	3.889	3.784	3.685	3.589	3.498	3.410	3.326
7	4.712	4.564	4.423	4.288	4.160	4.039	3.922	3.812	3.706	3.605
8	5.146	4.968	4.799	4.639	4.487	4.344	4.207	4.078	3.954	3.837
9	5.537	5.328	5.132	4.946	4.772	4.607	4.451	4.303	4.163	4.031
10	5.889	5.650	5.426	5.216	5.019	4.833	4.659	4.494	4.339	4.192
11	6.207	5.938	5.687	5.453	5.234	5.029	4.836	4.656	4.486	4.327
12	6.492	6.194	5.918	5.660	5.421	5.197	4.988	4.793	4.611	4.439
13	6.750	6.424	6.122	5.842	5.583	5.342	5.118	4.910	4.715	4.533
14	6.982	6.628	6.302	6.002	5.724	5.468	5.229	5.008	4.802	4.611
15	7.191	6.811	6.462	6.142	5.847	5.575	5.324	5.092	4.876	4.675
16	7.379	6.974	6.604	6.265	5.954	5.668	5.405	5.162	4.938	4.730
17	7.549	7.120	6.729	6.373	6.047	5.749	5.475	5.222	4.990	4.775
18	7.702	7.250	6.840	6.467	6.128	5.818	5.534	5.273	5.033	4.812
19	7.839	7.366	6.938	6.550	6.198	5.877	5.584	5.316	5.070	4.843
20	7.963	7.469	7.025	6.623	6.259	5.929	5.628	5.353	5.101	4.870
21	8.075	7.562	7.102	6.687	6.312	5.973	5.665	5.384	5.127	4.891
22	8.176	7.645	7.170	6.743	6.359	6.011	5.696	5.410	5.149	4.909
23	8.266	7.718	7.230	6.792	6.399	6.044	5.723	5.432	5.167	4.925
24	8.348	7.784	7.283	6.835	6.434	6.073	5.746	5.451	5.182	4.937
25	8.422	7.843	7.330	6.873	6.464	6.097	5.766	5.467	5.195	4.948
26	8.488	7.896	7.372	6.906	6.491	6.118	5.783	5.480	5.206	4.956
27	8.548	7.943	7.409	6.935	6.514	6.136	5.798	5.492	5.215	4.964
28	8.602	7.984	7.441	6.961	6.534	6.152	5.810	5.502	5.223	4.970
29	8.650	8.022	7.470	6.983	6.551	6.166	5.820	5.510	5.229	4.975
30	8.694	8.055	7.496	7.003	6.566	6.177	5.829	5.517	5.235	4.979
31	8.733	8.085	7.518	7.020	6.579	6.187	5.837	5.523	5.239	4.982
32	8.769	8.112	7.538	7.035	6.591	6.196	5.844	5.528	5.243	4.985
33	8.801	8.135	7.556	7.048	6.600	6.203	5.849	5.532	5.246	4.988
34	8.829	8.157	7.572	7.060	6.609	6.210	5.854	5.536	5.249	4.990
35	8.855	8.176	7.586	7.070	6.617	6.215	5.858	5.539	5.251	4.992
36	8.879	8.192	7.598	7.079	6.623	6.220	5.862	5.541	5.253	4.993
37	8.900	8.208	7.609	7.087	6.629	6.224	5.865	5.543	5.255	4.994
38	8.919	8.221	7.618	7.094	6.634	6.228	5.867	5.545	5.256	4.995
39	8.936	8.233	7.627	7.100	6.638	6.231	5.869	5.547	5.257	4.996
40	8.951	8.244	7.634	7.105	6.642	6.233	5.871	5.548	5.258	4.997
41	8.965	8.253	7.641	7.110	6.645	6.236	5.873	5.549	5.259	4.997
42	8.977	8.262	7.647	7.114	6.648	6.238	5.874	5.550	5.260	4.998
43	8.989	8.270	7.652	7.117	6.650	6.239	5.875	5.551	5.260	4.998
44	8.999	8.276	7.657	7.120	6.652	6.241	5.876	5.552	5.261	4.998
45	9.008	8.283	7.661	7.123	6.654	6.242	5.877	5.552	5.261	4.999
46	9.016	8.288	7.664	7.126	6.656	6.243	5.878	5.553	5.261	4.999
47	9.024	8.293	7.668	7.128	6.657	6.244	5.879	5.553	5.262	4.999
48	9.030	8.297	7.671	7.130	6.659	6.245	5.879	5.554	5.262	4.999
49	9.036	8.301	7.673	7.131	6.660	6.246	5.880	5.554	5.262	4.999
50	9.042	8.304	7.675	7.133	6.661	6.246	5.880	5.554	5.262	4.999