Summary of Useful Formulas for Discrete Models

Name	**Symbol and Formula**
Compound amount factor	$(F/P, i, N) = (1+i)^N$
Present worth factor	$(P/F, i, N) = \dfrac{1}{(1+i)^N}$
Sinking fund factor	$(A/F, i, N) = \dfrac{i}{(1+i)^N - 1}$
Uniform series compound amount factor	$(F/A, i, N) = \dfrac{(1+i)^N - 1}{i}$
Capital recovery factor	$(A/P, i, N) = \dfrac{i(1+i)^N}{(1+i)^N - 1}$
Series present worth factor	$(P/A, i, N) = \dfrac{(1+i)^N - 1}{i(1+i)^N}$
Arithmetic gradient to annuity conversion factor	$(A/G, i, N) = \dfrac{1}{i} - \dfrac{N}{(1+i)^N - 1}$
Arithmetic gradient to present worth conversion factor	$(P/G, i, N) = \dfrac{(1+i)^N - iN - 1}{i^2(1+i)^N}$
Geometric gradient to present worth conversion factor	$(P/A, g, i, N) = \dfrac{(P/A, i^o, N)}{1+g}$ $(P/A, g, i, N) = \left(\dfrac{(1+i^o)^N - 1}{i^o(1+i^o)^N}\right)\dfrac{1}{1+g}$ $i^o = \dfrac{1+i}{1+g} - 1$
Capitalized value formula	$P = \dfrac{A}{i}$
Capital recovery formula	$A = (P - S)(A/P, i, N) + Si$

Effective interest rate per year: $i_e = (1+r/m)^m - 1$

where r = nominal interest rate per year
m = number of compounding periods per year

Learning curve: $T_N = T_1 N^b$

where T_N = time required to produce the N^{th} unit
b = log(learning rate)/log(2)

Engineering Economics Formulas, Discrete Compounding

Factor Name	Symbol	Factor
Single sum, present worth factor	(P/F, i, N)	$(1+i)^{-N}$
Single sum, future worth factor	(F/P, i, N)	$(1+i)^{N}$
Uniform series, present worth factor	(P/A, i, N)	$\frac{(1+i)^{N}-1}{i(1+i)^{N}}$
Capital recovery factor	(A/P, i, N)	$\frac{i(1+i)^{N}}{(1+i)^{N}-1}$
Uniform series, future worth factor	(F/A, i, N)	$\frac{(1+i)^{N}-1}{i}$
Sinking fund factor	(A/F, i, N)	$\frac{i}{(1+i)^{N}-1}$
Gradient series, present worth factor	(P/G, i, N)	$\frac{[1-(1+Ni)^{N}(1+i)^{-N}]}{i^{2}}$
Gradient to uniform series factor	(A/G, i, N)	$\frac{(1+i)^{N}-(1+Ni)}{i[(1+i)^{N}-1]}$
Geometric series, present worth factor	(P/A, g, i, N)	$\frac{[1-(1+g)^{N}(1+i)^{-N}]}{i-g}$ for $i\neq g$
		$N(1+i)^{-1}$ for $i=g$

Effective interest rate per year

$$i_e = (1+r/m)^{m} - 1$$

where:

r = nominal interest rate per year
m = number of compounding periods per year

Discrete Compound Interest Factors

	Single Payment		Uniform Payment Series				Arithmetic Gradient		
i = 0.5%	Compound Amount Factor	Present Worth Factor	Sinking Fund Factor	Capital Recovery Factor	Compound Amount Factor	Present Worth Factor	Gradient Uniform Factor	Gradient Present Factor	*i* = 0.5%
N	*(F/P,i,N)*	*(P/F,i,N)*	*(A/F,i,N)*	*(A/P,i,n)*	*(F/A,i,N)*	*(P/A,i,N)*	*(A/G,i,N)*	*(P/G,i,N)*	*N*
1	1.0050	0.99502	1.0000	1.0050	1.0000	0.99502	0.00000	0.00000	**1**
2	1.0100	0.99007	0.49875	0.50375	2.0050	1.9851	0.49875	0.99007	**2**
3	1.0151	0.98515	0.33167	0.33667	3.0150	2.9702	0.99667	2.9604	**3**
4	1.0202	0.98025	0.24813	0.25313	4.0301	3.9505	1.4938	5.9011	**4**
5	1.0253	0.97537	0.19801	0.20301	5.0503	4.9259	1.9900	9.8026	**5**
6	1.0304	0.97052	0.16460	0.16960	6.0755	5.8964	2.4855	14.655	**6**
7	1.0355	0.96569	0.14073	0.14573	7.1059	6.8621	2.9801	20.449	**7**
8	1.0407	0.96089	0.12283	0.12783	8.1414	7.8230	3.4738	27.176	**8**
9	1.0459	0.95610	0.10891	0.11391	9.1821	8.7791	3.9668	34.824	**9**
10	1.0511	0.95135	0.097771	0.10277	10.228	9.7304	4.4589	43.386	**10**
11	1.0564	0.94661	0.088659	0.093659	11.279	10.677	4.9501	52.853	**11**
12	1.0617	0.94191	0.081066	0.086066	12.336	11.619	5.4406	63.214	**12**
13	1.0670	0.93722	0.074642	0.079642	13.397	12.556	5.9302	74.460	**13**
14	1.0723	0.93256	0.069136	0.074136	14.464	13.489	6.4190	86.583	**14**
15	1.0777	0.92792	0.064364	0.069364	15.537	14.417	6.9069	99.574	**15**
16	1.0831	0.92330	0.060189	0.065189	16.614	15.340	7.3940	113.42	**16**
17	1.0885	0.91871	0.056506	0.061506	17.697	16.259	7.8803	128.12	**17**
18	1.0939	0.91414	0.053232	0.058232	18.786	17.173	8.3658	143.66	**18**
19	1.0994	0.90959	0.050303	0.055303	19.880	18.082	8.8504	160.04	**19**
20	1.1049	0.90506	0.047666	0.052666	20.979	18.987	9.3342	177.23	**20**
21	1.1104	0.90056	0.045282	0.050282	22.084	19.888	9.8172	195.24	**21**
22	1.1160	0.89608	0.043114	0.048114	23.194	20.784	10.299	214.06	**22**
23	1.1216	0.89162	0.041135	0.046135	24.310	21.676	10.781	233.68	**23**
24	1.1272	0.88719	0.039321	0.044321	25.432	22.563	11.261	254.08	**24**
25	1.1328	0.88277	0.037652	0.042652	26.559	23.446	11.741	275.27	**25**
26	1.1385	0.87838	0.036112	0.041112	27.692	24.324	12.220	297.23	**26**
27	1.1442	0.87401	0.034686	0.039686	28.830	25.198	12.698	319.95	**27**
28	1.1499	0.86966	0.033362	0.038362	29.975	26.068	13.175	343.43	**28**
29	1.1556	0.86533	0.032129	0.037129	31.124	26.933	13.651	367.66	**29**
30	1.1614	0.86103	0.030979	0.035979	32.280	27.794	14.126	392.63	**30**
31	1.1672	0.85675	0.029903	0.034903	33.441	28.651	14.601	418.33	**31**
32	1.1730	0.85248	0.028895	0.033895	34.609	29.503	15.075	444.76	**32**
33	1.1789	0.84824	0.027947	0.032947	35.782	30.352	15.548	471.91	**33**
34	1.1848	0.84402	0.027056	0.032056	36.961	31.196	16.020	499.76	**34**
35	1.1907	0.83982	0.026215	0.031215	38.145	32.035	16.492	528.31	**35**
40	1.2208	0.81914	0.022646	0.027646	44.159	36.172	18.836	681.33	**40**
45	1.2516	0.79896	0.019871	0.024871	50.324	40.207	21.159	850.76	**45**
50	1.2832	0.77929	0.017654	0.022654	56.645	44.143	23.462	1035.70	**50**
55	1.3156	0.76009	0.015841	0.020841	63.126	47.981	25.745	1235.3	**55**
60	1.3489	0.74137	0.014333	0.019333	69.770	51.726	28.006	1448.6	**60**
65	1.3829	0.72311	0.013058	0.018058	76.582	55.377	30.247	1675.0	**65**
70	1.4178	0.70530	0.011967	0.016967	83.566	58.939	32.468	1913.6	**70**
75	1.4536	0.68793	0.011022	0.016022	90.727	62.414	34.668	2163.8	**75**
80	1.4903	0.67099	0.010197	0.015197	98.068	65.802	36.847	2424.6	**80**
85	1.5280	0.65446	0.009470	0.014470	105.59	69.108	39.006	2695.6	**85**
90	1.5666	0.63834	0.008825	0.013825	113.31	72.331	41.145	2976.1	**90**
95	1.6061	0.62262	0.008249	0.013249	121.22	75.476	43.263	3265.3	**95**
100	1.6467	0.60729	0.007732	0.012732	129.33	78.543	45.361	3562.8	**100**

Discrete Compound Interest Factors

	Single Payment		Uniform Payment Series				Arithmetic Gradient		
i = 1%	Compound Amount Factor	Present Worth Factor	Sinking Fund Factor	Capital Recovery Factor	Compound Amount Factor	Present Worth Factor	Gradient Uniform Factor	Gradient Present Factor	*i* = 1%
N	*(F/P,i,N)*	*(P/F,i,N)*	*(A/F,i,N)*	*(A/P,i,n)*	*(F/A,i,N)*	*(P/A,i,N)*	*(A/G,i,N)*	*(P/G,i,N)*	*N*
1	1.0100	0.99010	1.0000	1.0100	1.0000	0.99010	0.00000	0.00000	**1**
2	1.0201	0.98030	0.49751	0.50751	2.0100	1.9704	0.49751	0.98030	**2**
3	1.0303	0.97059	0.33002	0.34002	3.0301	2.9410	0.99337	2.9215	**3**
4	1.0406	0.96098	0.24628	0.25628	4.0604	3.9020	1.4876	5.8044	**4**
5	1.0510	0.95147	0.19604	0.20604	5.1010	4.8534	1.9801	9.6103	**5**
6	1.0615	0.94205	0.16255	0.17255	6.1520	5.7955	2.4710	14.321	**6**
7	1.0721	0.93272	0.13863	0.14863	7.2135	6.7282	2.9602	19.917	**7**
8	1.0829	0.92348	0.120690	0.13069	8.2857	7.6517	3.4478	26.381	**8**
9	1.0937	0.91434	0.106740	0.11674	9.3685	8.5660	3.9337	33.696	**9**
10	1.1046	0.90529	0.095582	0.10558	10.462	9.4713	4.4179	41.843	**10**
11	1.1157	0.89632	0.086454	0.096454	11.567	10.368	4.9005	50.807	**11**
12	1.1268	0.88745	0.078849	0.088849	12.683	11.255	5.3815	60.569	**12**
13	1.1381	0.87866	0.072415	0.082415	13.809	12.134	5.8607	71.113	**13**
14	1.1495	0.86996	0.066901	0.076901	14.947	13.004	6.3384	82.422	**14**
15	1.1610	0.86135	0.062124	0.072124	16.097	13.865	6.8143	94.481	**15**
16	1.1726	0.85282	0.057945	0.067945	17.258	14.718	7.2886	107.27	**16**
17	1.1843	0.84438	0.054258	0.064258	18.430	15.562	7.7613	120.78	**17**
18	1.1961	0.83602	0.050982	0.060982	19.615	16.398	8.2323	135.00	**18**
19	1.2081	0.82774	0.048052	0.058052	20.811	17.226	8.7017	149.90	**19**
20	1.2202	0.81954	0.045415	0.055415	22.019	18.046	9.1694	165.47	**20**
21	1.2324	0.81143	0.043031	0.053031	23.239	18.857	9.6354	181.69	**21**
22	1.2447	0.80340	0.040864	0.050864	24.472	19.660	10.100	198.57	**22**
23	1.2572	0.79544	0.038886	0.048886	25.716	20.456	10.563	216.07	**23**
24	1.2697	0.78757	0.037073	0.047073	26.973	21.243	11.024	234.18	**24**
25	1.2824	0.77977	0.035407	0.045407	28.243	22.023	11.483	252.89	**25**
26	1.2953	0.77205	0.033869	0.043869	29.526	22.795	11.941	272.20	**26**
27	1.3082	0.76440	0.032446	0.042446	30.821	23.560	12.397	292.07	**27**
28	1.3213	0.75684	0.031124	0.041124	32.129	24.316	12.852	312.50	**28**
29	1.3345	0.74934	0.029895	0.039895	33.450	25.066	13.304	333.49	**29**
30	1.3478	0.74192	0.028748	0.038748	34.785	25.808	13.756	355.00	**30**
31	1.3613	0.73458	0.027676	0.037676	36.133	26.542	14.205	377.04	**31**
32	1.3749	0.72730	0.026671	0.036671	37.494	27.270	14.653	399.59	**32**
33	1.3887	0.72010	0.025727	0.035727	38.869	27.990	15.099	422.63	**33**
34	1.4026	0.71297	0.024840	0.034840	40.258	28.703	15.544	446.16	**34**
35	1.4166	0.70591	0.024004	0.034004	41.660	29.409	15.987	470.16	**35**
40	1.4889	0.67165	0.020456	0.030456	48.886	32.835	18.178	596.86	**40**
45	1.5648	0.63905	0.017705	0.027705	56.481	36.095	20.327	733.70	**45**
50	1.6446	0.60804	0.015513	0.025513	64.463	39.196	22.436	879.42	**50**
55	1.7285	0.57853	0.013726	0.023726	72.852	42.147	24.505	1032.8	**55**
60	1.8167	0.55045	0.012244	0.022244	81.670	44.955	26.533	1192.8	**60**
65	1.9094	0.52373	0.010997	0.020997	90.937	47.627	28.522	1358.4	**65**
70	2.0068	0.49831	0.009933	0.019933	100.68	50.169	30.470	1528.6	**70**
75	2.1091	0.47413	0.009016	0.019016	110.91	52.587	32.379	1702.7	**75**
80	2.2167	0.45112	0.008219	0.018219	121.67	54.888	34.249	1879.9	**80**
85	2.3298	0.42922	0.007520	0.017520	132.98	57.078	36.080	2059.4	**85**
90	2.4486	0.40839	0.006903	0.016903	144.86	59.161	37.872	2240.6	**90**
95	2.5735	0.38857	0.006355	0.016355	157.35	61.143	39.626	2422.9	**95**
100	2.7048	0.36971	0.005866	0.015866	170.48	63.029	41.343	2605.8	**100**

Discrete Compound Interest Factors

	Single Payment		Uniform Payment Series				Arithmetic Gradient		
i = 2%	Compound Amount Factor	Present Worth Factor	Sinking Fund Factor	Capital Recovery Factor	Compound Amount Factor	Present Worth Factor	Gradient Uniform Factor	Gradient Present Factor	*i* = 2%
N	*(F/P,i,N)*	*(P/F,i,N)*	*(A/F,i,N)*	*(A/P,i,n)*	*(F/A,i,N)*	*(P/A,i,N)*	*(A/G,i,N)*	*(P/G,i,N)*	*N*
1	1.0200	0.98039	1.0000	1.0200	1.0000	0.98039	0.00000	0.00000	**1**
2	1.0404	0.96117	0.49505	0.51505	2.0200	1.9416	0.49505	0.96117	**2**
3	1.0612	0.94232	0.32675	0.34675	3.0604	2.8839	0.98680	2.8458	**3**
4	1.0824	0.92385	0.24262	0.26262	4.1216	3.8077	1.4752	5.6173	**4**
5	1.1041	0.90573	0.19216	0.21216	5.2040	4.7135	1.9604	9.2403	**5**
6	1.1262	0.88797	0.15853	0.17853	6.3081	5.6014	2.4423	13.680	**6**
7	1.1487	0.87056	0.13451	0.15451	7.4343	6.4720	2.9208	18.903	**7**
8	1.1717	0.85349	0.11651	0.13651	8.5830	7.3255	3.3961	24.878	**8**
9	1.1951	0.83676	0.10252	0.12252	9.755	8.1622	3.8681	31.572	**9**
10	1.2190	0.82035	0.091327	0.11133	10.950	8.9826	4.3367	38.955	**10**
11	1.2434	0.80426	0.082178	0.10218	12.169	9.7868	4.8021	46.998	**11**
12	1.2682	0.78849	0.074560	0.094560	13.412	10.575	5.2642	55.671	**12**
13	1.2936	0.77303	0.068118	0.088118	14.680	11.348	5.7231	64.948	**13**
14	1.3195	0.75788	0.062602	0.082602	15.974	12.106	6.1786	74.800	**14**
15	1.3459	0.74301	0.057825	0.077825	17.293	12.849	6.6309	85.202	**15**
16	1.3728	0.72845	0.053650	0.073650	18.639	13.578	7.0799	96.129	**16**
17	1.4002	0.71416	0.049970	0.069970	20.012	14.292	7.5256	107.56	**17**
18	1.4282	0.70016	0.046702	0.066702	21.412	14.992	7.9681	119.46	**18**
19	1.4568	0.68643	0.043782	0.063782	22.841	15.678	8.4073	131.81	**19**
20	1.4859	0.67297	0.041157	0.061157	24.297	16.351	8.8433	144.60	**20**
21	1.5157	0.65978	0.038785	0.058785	25.783	17.011	9.2760	157.80	**21**
22	1.5460	0.64684	0.036631	0.056631	27.299	17.658	9.7055	171.38	**22**
23	1.5769	0.63416	0.034668	0.054668	28.845	18.292	10.1317	185.33	**23**
24	1.6084	0.62172	0.032871	0.052871	30.422	18.914	10.555	199.63	**24**
25	1.6406	0.60953	0.031220	0.051220	32.030	19.523	10.974	214.26	**25**
26	1.6734	0.59758	0.029699	0.049699	33.671	20.121	11.391	229.20	**26**
27	1.7069	0.58586	0.028293	0.048293	35.344	20.707	11.804	244.43	**27**
28	1.7410	0.57437	0.026990	0.046990	37.051	21.281	12.214	259.94	**28**
29	1.7758	0.56311	0.025778	0.045778	38.792	21.844	12.621	275.71	**29**
30	1.8114	0.55207	0.024650	0.044650	40.568	22.396	13.025	291.72	**30**
31	1.8476	0.54125	0.023596	0.043596	42.379	22.938	13.426	307.95	**31**
32	1.8845	0.53063	0.022611	0.042611	44.227	23.468	13.823	324.40	**32**
33	1.9222	0.52023	0.021687	0.041687	46.112	23.989	14.217	341.05	**33**
34	1.9607	0.51003	0.020819	0.040819	48.034	24.499	14.608	357.88	**34**
35	1.9999	0.50003	0.020002	0.040002	49.994	24.999	14.996	374.88	**35**
40	2.2080	0.45289	0.016556	0.036556	60.402	27.355	16.889	461.99	**40**
45	2.4379	0.41020	0.013910	0.033910	71.893	29.490	18.703	551.57	**45**
50	2.6916	0.37153	0.011823	0.031823	84.579	31.424	20.442	642.36	**50**
55	2.9717	0.33650	0.010143	0.030143	98.587	33.175	22.106	733.35	**55**
60	3.2810	0.30478	0.008768	0.028768	114.05	34.761	23.696	823.70	**60**
65	3.6225	0.27605	0.007626	0.027626	131.13	36.197	25.215	912.71	**65**
70	3.9996	0.25003	0.006668	0.026668	149.98	37.499	26.663	999.83	**70**
75	4.4158	0.22646	0.005855	0.025855	170.79	38.677	28.043	1084.6	**75**
80	4.8754	0.20511	0.005161	0.025161	193.77	39.745	29.357	1166.8	**80**
85	5.3829	0.18577	0.004563	0.024563	219.14	40.711	30.606	1246.0	**85**
90	5.9431	0.16826	0.004046	0.024046	247.16	41.587	31.793	1322.2	**90**
95	6.5617	0.15240	0.003596	0.023596	278.08	42.380	32.919	1395.1	**95**
100	7.2446	0.13803	0.003203	0.023203	312.23	43.098	33.986	1464.8	**100**

Discrete Compound Interest Factors

	Single Payment		Uniform Payment Series				Arithmetic Gradient		
i = 3%	Compound Amount Factor	Present Worth Factor	Sinking Fund Factor	Capital Recovery Factor	Compound Amount Factor	Present Worth Factor	Gradient Uniform Factor	Gradient Present Factor	*i* = 3%
N	*(F/P,i,N)*	*(P/F,i,N)*	*(A/F,i,N)*	*(A/P,i,n)*	*(F/A,i,N)*	*(P/A,i,N)*	*(A/G,i,N)*	*(P/G,i,N)*	*N*
1	1.0300	0.97087	1.0000	1.0300	1.0000	0.97087	0.00000	0.00000	**1**
2	1.0609	0.94260	0.49261	0.52261	2.0300	1.9135	0.49261	0.94260	**2**
3	1.0927	0.91514	0.32353	0.35353	3.0909	2.8286	0.98030	2.7729	**3**
4	1.1255	0.88849	0.23903	0.26903	4.1836	3.7171	1.4631	5.4383	**4**
5	1.1593	0.86261	0.18835	0.21835	5.3091	4.5797	1.9409	8.8888	**5**
6	1.1941	0.83748	0.15460	0.18460	6.4684	5.4172	2.4138	13.076	**6**
7	1.2299	0.81309	0.13051	0.16051	7.6625	6.2303	2.8819	17.955	**7**
8	1.2668	0.78941	0.11246	0.14246	8.8923	7.0197	3.3450	23.481	**8**
9	1.3048	0.76642	0.098434	0.12843	10.159	7.7861	3.8032	29.612	**9**
10	1.3439	0.74409	0.087231	0.11723	11.464	8.5302	4.2565	36.309	**10**
11	1.3842	0.72242	0.078077	0.10808	12.808	9.2526	4.7049	43.533	**11**
12	1.4258	0.70138	0.070462	0.10046	14.192	9.9540	5.1485	51.248	**12**
13	1.4685	0.68095	0.064030	0.094030	15.618	10.635	5.5872	59.420	**13**
14	1.5126	0.66112	0.058526	0.088526	17.086	11.296	6.0210	68.014	**14**
15	1.5580	0.64186	0.053767	0.083767	18.599	11.938	6.4500	77.000	**15**
16	1.6047	0.62317	0.049611	0.079611	20.157	12.561	6.8742	86.348	**16**
17	1.6528	0.60502	0.045953	0.075953	21.762	13.166	7.2936	96.028	**17**
18	1.7024	0.58739	0.042709	0.072709	23.414	13.754	7.7081	106.01	**18**
19	1.7535	0.57029	0.039814	0.069814	25.117	14.324	8.1179	116.28	**19**
20	1.8061	0.55368	0.037216	0.067216	26.870	14.877	8.5229	126.80	**20**
21	1.8603	0.53755	0.034872	0.064872	28.676	15.415	8.9231	137.55	**21**
22	1.9161	0.52189	0.032747	0.062747	30.537	15.937	9.3186	148.51	**22**
23	1.9736	0.50669	0.030814	0.060814	32.453	16.444	9.7093	159.66	**23**
24	2.0328	0.49193	0.029047	0.059047	34.426	16.936	10.095	170.97	**24**
25	2.0938	0.47761	0.027428	0.057428	36.459	17.413	10.477	182.43	**25**
26	2.1566	0.46369	0.025938	0.055938	38.553	17.877	10.853	194.03	**26**
27	2.2213	0.45019	0.024564	0.054564	40.710	18.327	11.226	205.73	**27**
28	2.2879	0.43708	0.023293	0.053293	42.931	18.764	11.593	217.53	**28**
29	2.3566	0.42435	0.022115	0.052115	45.219	19.188	11.956	229.41	**29**
30	2.4273	0.41199	0.021019	0.051019	47.575	19.600	12.314	241.36	**30**
31	2.5001	0.39999	0.019999	0.049999	50.003	20.000	12.668	253.36	**31**
32	2.5751	0.38834	0.019047	0.049047	52.503	20.389	13.017	265.40	**32**
33	2.6523	0.37703	0.018156	0.048156	55.078	20.766	13.362	277.46	**33**
34	2.7319	0.36604	0.017322	0.047322	57.730	21.132	13.702	289.54	**34**
35	2.8139	0.35538	0.016539	0.046539	60.462	21.487	14.037	301.63	**35**
40	3.2620	0.30656	0.013262	0.043262	75.401	23.115	15.650	361.75	**40**
45	3.7816	0.26444	0.010785	0.040785	92.720	24.519	17.156	420.63	**45**
50	4.3839	0.22811	0.008865	0.038865	112.80	25.730	18.558	477.48	**50**
55	5.0821	0.19677	0.007349	0.037349	136.07	26.774	19.860	531.74	**55**
60	5.8916	0.16973	0.006133	0.036133	163.05	27.676	21.067	583.05	**60**
65	6.8300	0.14641	0.005146	0.035146	194.33	28.453	22.184	631.20	**65**
70	7.9178	0.12630	0.004337	0.034337	230.59	29.123	23.215	676.09	**70**
75	9.1789	0.10895	0.003668	0.033668	272.63	29.702	24.163	717.70	**75**
80	10.641	0.09398	0.003112	0.033112	321.36	30.201	25.035	756.09	**80**
85	12.336	0.08107	0.002647	0.032647	377.86	30.631	25.835	791.35	**85**
90	14.300	0.06993	0.002256	0.032256	443.35	31.002	26.567	823.63	**90**
95	16.578	0.06032	0.001926	0.031926	519.27	31.323	27.235	853.07	**95**
100	19.219	0.05203	0.001647	0.031647	607.29	31.599	27.844	879.85	**100**

Discrete Compound Interest Factors

	Single Payment		Uniform Payment Series				Arithmetic Gradient		
i = 4%	Compound Amount Factor	Present Worth Factor	Sinking Fund Factor	Capital Recovery Factor	Compound Amount Factor	Present Worth Factor	Gradient Uniform Factor	Gradient Present Factor	*i* = 4%
N	*(F/P,i,N)*	*(P/F,i,N)*	*(A/F,i,N)*	*(A/P,i,n)*	*(F/A,i,N)*	*(P/A,i,N)*	*(A/G,i,N)*	*(P/G,i,N)*	*N*
1	1.0400	0.96154	1.0000	1.0400	1.0000	0.96154	0.00000	0.00000	**1**
2	1.0816	0.92456	0.49020	0.53020	2.0400	1.8861	0.49020	0.92456	**2**
3	1.1249	0.88900	0.32035	0.36035	3.1216	2.7751	0.97386	2.7025	**3**
4	1.1699	0.85480	0.23549	0.27549	4.2465	3.6299	1.4510	5.2670	**4**
5	1.2167	0.82193	0.18463	0.22463	5.4163	4.4518	1.9216	8.5547	**5**
6	1.2653	0.79031	0.15076	0.19076	6.6330	5.2421	2.3857	12.506	**6**
7	1.3159	0.75992	0.12661	0.16661	7.8983	6.0021	2.8433	17.066	**7**
8	1.3686	0.73069	0.10853	0.14853	9.2142	6.7327	3.2944	22.181	**8**
9	1.4233	0.70259	0.094493	0.13449	10.583	7.4353	3.7391	27.801	**9**
10	1.4802	0.67556	0.083291	0.12329	12.006	8.1109	4.1773	33.881	**10**
11	1.5395	0.64958	0.074149	0.11415	13.486	8.7605	4.6090	40.377	**11**
12	1.6010	0.62460	0.066552	0.10655	15.026	9.3851	5.0343	47.248	**12**
13	1.6651	0.60057	0.060144	0.10014	16.627	9.9856	5.4533	54.455	**13**
14	1.7317	0.57748	0.054669	0.094669	18.292	10.563	5.8659	61.962	**14**
15	1.8009	0.55526	0.049941	0.089941	20.024	11.118	6.2721	69.735	**15**
16	1.8730	0.53391	0.045820	0.085820	21.825	11.652	6.6720	77.744	**16**
17	1.9479	0.51337	0.042199	0.082199	23.698	12.166	7.0656	85.958	**17**
18	2.0258	0.49363	0.038993	0.078993	25.645	12.659	7.4530	94.350	**18**
19	2.1068	0.47464	0.036139	0.076139	27.671	13.134	7.8342	102.89	**19**
20	2.1911	0.45639	0.033582	0.073582	29.778	13.590	8.2091	111.56	**20**
21	2.2788	0.43883	0.031280	0.071280	31.969	14.029	8.5779	120.34	**21**
22	2.3699	0.42196	0.029199	0.069199	34.248	14.451	8.9407	129.20	**22**
23	2.4647	0.40573	0.027309	0.067309	36.618	14.857	9.2973	138.13	**23**
24	2.5633	0.39012	0.025587	0.065587	39.083	15.247	9.6479	147.10	**24**
25	2.6658	0.37512	0.024012	0.064012	41.646	15.622	9.9925	156.10	**25**
26	2.7725	0.36069	0.022567	0.062567	44.312	15.983	10.3312	165.12	**26**
27	2.8834	0.34682	0.021239	0.061239	47.084	16.330	10.664	174.14	**27**
28	2.9987	0.33348	0.020013	0.060013	49.968	16.663	10.991	183.14	**28**
29	3.1187	0.32065	0.018880	0.058880	52.966	16.984	11.312	192.12	**29**
30	3.2434	0.30832	0.017830	0.057830	56.085	17.292	11.627	201.06	**30**
31	3.3731	0.29646	0.016855	0.056855	59.328	17.588	11.937	209.96	**31**
32	3.5081	0.28506	0.015949	0.055949	62.701	17.874	12.241	218.79	**32**
33	3.6484	0.27409	0.015104	0.055104	66.210	18.148	12.540	227.56	**33**
34	3.7943	0.26355	0.014315	0.054315	69.858	18.411	12.832	236.26	**34**
35	3.9461	0.25342	0.013577	0.053577	73.652	18.665	13.120	244.88	**35**
40	4.8010	0.20829	0.010523	0.050523	95.026	19.793	14.477	286.53	**40**
45	5.8412	0.17120	0.008262	0.048262	121.03	20.720	15.705	325.40	**45**
50	7.1067	0.14071	0.006550	0.046550	152.67	21.482	16.812	361.16	**50**
55	8.6464	0.11566	0.005231	0.045231	191.16	22.109	17.807	393.69	**55**
60	10.520	0.095060	0.004202	0.044202	237.99	22.623	18.697	423.00	**60**
65	12.799	0.078133	0.003390	0.043390	294.97	23.047	19.491	449.20	**65**
70	15.572	0.064219	0.002745	0.042745	364.29	23.395	20.196	472.48	**70**
75	18.945	0.052784	0.002229	0.042229	448.63	23.680	20.821	493.04	**75**
80	23.050	0.043384	0.001814	0.041814	551.24	23.915	21.372	511.12	**80**
85	28.044	0.035659	0.001479	0.041479	676.09	24.109	21.857	526.94	**85**
90	34.119	0.029309	0.001208	0.041208	827.98	24.267	22.283	540.74	**90**
95	41.511	0.024090	0.000987	0.040987	1012.8	24.398	22.655	552.73	**95**
100	50.505	0.019800	0.000808	0.040808	1237.6	24.505	22.980	563.12	**100**

Discrete Compound Interest Factors

	Single Payment		Uniform Payment Series				Arithmetic Gradient		
i = 5%	Compound Amount Factor	Present Worth Factor	Sinking Fund Factor	Capital Recovery Factor	Compound Amount Factor	Present Worth Factor	Gradient Uniform Factor	Gradient Present Factor	*i* = 5%
N	*(F/P,i,N)*	*(P/F,i,N)*	*(A/F,i,N)*	*(A/P,i,n)*	*(F/A,i,N)*	*(P/A,i,N)*	*(A/G,i,N)*	*(P/G,i,N)*	*N*
1	1.0500	0.95238	1.0000	1.0500	1.0000	0.95238	0.00000	0.00000	**1**
2	1.1025	0.90703	0.48780	0.53780	2.0500	1.8594	0.48780	0.90703	**2**
3	1.1576	0.86384	0.31721	0.36721	3.1525	2.7232	0.96749	2.6347	**3**
4	1.2155	0.82270	0.23201	0.28201	4.3101	3.5460	1.4391	5.1028	**4**
5	1.2763	0.78353	0.18097	0.23097	5.5256	4.3295	1.9025	8.2369	**5**
6	1.3401	0.74622	0.14702	0.19702	6.8019	5.0757	2.3579	11.968	**6**
7	1.4071	0.71068	0.12282	0.17282	8.1420	5.7864	2.8052	16.232	**7**
8	1.4775	0.67684	0.10472	0.15472	9.5491	6.4632	3.2445	20.970	**8**
9	1.5513	0.64461	0.090690	0.14069	11.027	7.1078	3.6758	26.127	**9**
10	1.6289	0.61391	0.079505	0.12950	12.578	7.7217	4.0991	31.652	**10**
11	1.7103	0.58468	0.070389	0.12039	14.207	8.3064	4.5144	37.499	**11**
12	1.7959	0.55684	0.062825	0.11283	15.917	8.8633	4.9219	43.624	**12**
13	1.8856	0.53032	0.056456	0.10646	17.713	9.3936	5.3215	49.988	**13**
14	1.9799	0.50507	0.051024	0.10102	19.599	9.8986	5.7133	56.554	**14**
15	2.0789	0.48102	0.046342	0.096342	21.579	10.380	6.0973	63.288	**15**
16	2.1829	0.45811	0.042270	0.092270	23.657	10.838	6.4736	70.160	**16**
17	2.2920	0.43630	0.038699	0.088699	25.840	11.274	6.8423	77.140	**17**
18	2.4066	0.41552	0.035546	0.085546	28.132	11.690	7.2034	84.204	**18**
19	2.5270	0.39573	0.032745	0.082745	30.539	12.085	7.5569	91.328	**19**
20	2.6533	0.37689	0.030243	0.080243	33.066	12.462	7.9030	98.488	**20**
21	2.7860	0.35894	0.027996	0.077996	35.719	12.821	8.2416	105.67	**21**
22	2.9253	0.34185	0.025971	0.075971	38.505	13.163	8.5730	112.85	**22**
23	3.0715	0.32557	0.024137	0.074137	41.430	13.489	8.8971	120.01	**23**
24	3.2251	0.31007	0.022471	0.072471	44.502	13.799	9.2140	127.14	**24**
25	3.3864	0.29530	0.020952	0.070952	47.727	14.094	9.5238	134.23	**25**
26	3.5557	0.28124	0.019564	0.069564	51.113	14.375	9.8266	141.26	**26**
27	3.7335	0.26785	0.018292	0.068292	54.669	14.643	10.122	148.22	**27**
28	3.9201	0.25509	0.017123	0.067123	58.403	14.898	10.411	155.11	**28**
29	4.1161	0.24295	0.016046	0.066046	62.323	15.141	10.694	161.91	**29**
30	4.3219	0.23138	0.015051	0.065051	66.439	15.372	10.969	168.62	**30**
31	4.5380	0.22036	0.014132	0.064132	70.761	15.593	11.238	175.23	**31**
32	4.7649	0.20987	0.013280	0.063280	75.299	15.803	11.501	181.74	**32**
33	5.0032	0.19987	0.012490	0.062490	80.064	16.003	11.757	188.14	**33**
34	5.2533	0.19035	0.011755	0.061755	85.067	16.193	12.006	194.42	**34**
35	5.5160	0.18129	0.011072	0.061072	90.320	16.374	12.250	200.58	**35**
40	7.0400	0.14205	0.008278	0.058278	120.80	17.159	13.377	229.55	**40**
45	8.9850	0.11130	0.006262	0.056262	159.70	17.774	14.364	255.31	**45**
50	11.467	0.087204	0.004777	0.054777	209.35	18.256	15.223	277.91	**50**
55	14.636	0.068326	0.003667	0.053667	272.71	18.633	15.966	297.51	**55**
60	18.679	0.053536	0.002828	0.052828	353.58	18.929	16.606	314.34	**60**
65	23.840	0.041946	0.002189	0.052189	456.80	19.161	17.154	328.69	**65**
70	30.426	0.032866	0.001699	0.051699	588.53	19.343	17.621	340.84	**70**
75	38.833	0.025752	0.001322	0.051322	756.65	19.485	18.018	351.07	**75**
80	49.561	0.020177	0.001030	0.051030	971.23	19.596	18.353	359.65	**80**
85	63.254	0.015809	0.000803	0.050803	1245.09	19.684	18.635	366.80	**85**
90	80.730	0.012387	0.000627	0.050627	1594.61	19.752	18.871	372.75	**90**
95	103.035	0.009705	0.000490	0.050490	2040.7	19.806	19.069	377.68	**95**
100	131.501	0.007604	0.000383	0.050383	2610.0	19.848	19.234	381.75	**100**

Discrete Compound Interest Factors

	Single Payment		Uniform Payment Series				Arithmetic Gradient		
i = 6%	Compound Amount Factor	Present Worth Factor	Sinking Fund Factor	Capital Recovery Factor	Compound Amount Factor	Present Worth Factor	Gradient Uniform Factor	Gradient Present Factor	*i* = 6%
N	*(F/P,i,N)*	*(P/F,i,N)*	*(A/F,i,N)*	*(A/P,i,n)*	*(F/A,i,N)*	*(P/A,i,N)*	*(A/G,i,N)*	*(P/G,i,N)*	*N*
1	1.0600	0.94340	1.0000	1.0600	1.0000	0.94340	0.00000	0.00000	**1**
2	1.1236	0.89000	0.48544	0.54544	2.0600	1.8334	0.48544	0.89000	**2**
3	1.1910	0.83962	0.31411	0.37411	3.1836	2.6730	0.96118	2.5692	**3**
4	1.2625	0.79209	0.22859	0.28859	4.3746	3.4651	1.4272	4.9455	**4**
5	1.3382	0.74726	0.17740	0.23740	5.6371	4.2124	1.8836	7.9345	**5**
6	1.4185	0.70496	0.14336	0.20336	6.9753	4.9173	2.3304	11.459	**6**
7	1.5036	0.66506	0.11914	0.17914	8.3938	5.5824	2.7676	15.450	**7**
8	1.5938	0.62741	0.10104	0.16104	9.8975	6.2098	3.1952	19.842	**8**
9	1.6895	0.59190	0.087022	0.14702	11.491	6.8017	3.6133	24.577	**9**
10	1.7908	0.55839	0.075868	0.13587	13.181	7.3601	4.0220	29.602	**10**
11	1.8983	0.52679	0.066793	0.12679	14.972	7.8869	4.4213	34.870	**11**
12	2.0122	0.49697	0.059277	0.11928	16.870	8.3838	4.8113	40.337	**12**
13	2.1329	0.46884	0.052960	0.11296	18.882	8.8527	5.1920	45.963	**13**
14	2.2609	0.44230	0.047585	0.10758	21.015	9.2950	5.5635	51.713	**14**
15	2.3966	0.41727	0.042963	0.102963	23.276	9.712	5.9260	57.555	**15**
16	2.5404	0.39365	0.038952	0.098952	25.673	10.106	6.2794	63.459	**16**
17	2.6928	0.37136	0.035445	0.095445	28.213	10.477	6.6240	69.401	**17**
18	2.8543	0.35034	0.032357	0.092357	30.906	10.828	6.9597	75.357	**18**
19	3.0256	0.33051	0.029621	0.089621	33.760	11.158	7.2867	81.306	**19**
20	3.2071	0.31180	0.027185	0.087185	36.786	11.470	7.6051	87.230	**20**
21	3.3996	0.29416	0.025005	0.085005	39.993	11.764	7.9151	93.114	**21**
22	3.6035	0.27751	0.023046	0.083046	43.392	12.042	8.2166	98.941	**22**
23	3.8197	0.26180	0.021278	0.081278	46.996	12.303	8.5099	104.70	**23**
24	4.0489	0.24698	0.019679	0.079679	50.816	12.550	8.7951	110.38	**24**
25	4.2919	0.23300	0.018227	0.078227	54.865	12.783	9.0722	115.97	**25**
26	4.5494	0.21981	0.016904	0.076904	59.156	13.003	9.3414	121.47	**26**
27	4.8223	0.20737	0.015697	0.075697	63.706	13.211	9.6029	126.86	**27**
28	5.1117	0.19563	0.014593	0.074593	68.528	13.406	9.8568	132.14	**28**
29	5.4184	0.18456	0.013580	0.073580	73.640	13.591	10.103	137.31	**29**
30	5.7435	0.17411	0.012649	0.072649	79.058	13.765	10.342	142.36	**30**
31	6.0881	0.16425	0.011792	0.071792	84.802	13.929	10.574	147.29	**31**
32	6.4534	0.15496	0.011002	0.071002	90.890	14.084	10.799	152.09	**32**
33	6.8406	0.14619	0.010273	0.070273	97.343	14.230	11.017	156.77	**33**
34	7.2510	0.13791	0.009598	0.069598	104.18	14.368	11.228	161.32	**34**
35	7.6861	0.13011	0.008974	0.068974	111.43	14.498	11.432	165.74	**35**
40	10.286	0.097222	0.006462	0.066462	154.76	15.046	12.359	185.96	**40**
45	13.765	0.072650	0.004700	0.064700	212.74	15.456	13.141	203.11	**45**
50	18.420	0.054288	0.003444	0.063444	290.34	15.762	13.796	217.46	**50**
55	24.650	0.040567	0.002537	0.062537	394.17	15.991	14.341	229.32	**55**
60	32.988	0.030314	0.001876	0.061876	533.13	16.161	14.791	239.04	**60**
65	44.145	0.022653	0.001391	0.061391	719.08	16.289	15.160	246.95	**65**
70	59.076	0.016927	0.001033	0.061033	967.93	16.385	15.461	253.33	**70**
75	79.057	0.012649	0.000769	0.060769	1300.9	16.456	15.706	258.45	**75**
80	105.80	0.009452	0.000573	0.060573	1746.6	16.509	15.903	262.55	**80**
85	141.58	0.007063	0.000427	0.060427	2343.0	16.549	16.062	265.81	**85**
90	189.46	0.005278	0.000318	0.060318	3141.1	16.579	16.189	268.39	**90**
95	253.55	0.003944	0.000238	0.060238	4209.1	16.601	16.290	270.44	**95**
100	339.30	0.002947	0.000177	0.060177	5638.4	16.618	16.371	272.05	**100**

Discrete Compound Interest Factors

	Single Payment		Uniform Payment Series				Arithmetic Gradient		
i = 7%	Compound Amount Factor	Present Worth Factor	Sinking Fund Factor	Capital Recovery Factor	Compound Amount Factor	Present Worth Factor	Gradient Uniform Factor	Gradient Present Factor	*i* = 7%
N	*(F/P,i,N)*	*(P/F,i,N)*	*(A/F,i,N)*	*(A/P,i,n)*	*(F/A,i,N)*	*(P/A,i,N)*	*(A/G,i,N)*	*(P/G,i,N)*	*N*
1	1.0700	0.93458	1.0000	1.0700	1.0000	0.93458	0.00000	0.00000	**1**
2	1.1449	0.87344	0.48309	0.55309	2.0700	1.8080	0.48309	0.87344	**2**
3	1.2250	0.81630	0.31105	0.38105	3.2149	2.6243	0.95493	2.5060	**3**
4	1.3108	0.76290	0.22523	0.29523	4.4399	3.3872	1.4155	4.7947	**4**
5	1.4026	0.71299	0.17389	0.24389	5.7507	4.1002	1.8650	7.6467	**5**
6	1.5007	0.66634	0.13980	0.20980	7.1533	4.7665	2.3032	10.978	**6**
7	1.6058	0.62275	0.11555	0.18555	8.6540	5.3893	2.7304	14.715	**7**
8	1.7182	0.58201	0.097468	0.16747	10.260	5.9713	3.1465	18.789	**8**
9	1.8385	0.54393	0.083486	0.15349	11.978	6.5152	3.5517	23.140	**9**
10	1.9672	0.50835	0.072378	0.14238	13.816	7.0236	3.9461	27.716	**10**
11	2.1049	0.47509	0.063357	0.13336	15.784	7.4987	4.3296	32.466	**11**
12	2.2522	0.44401	0.055902	0.12590	17.888	7.9427	4.7025	37.351	**12**
13	2.4098	0.41496	0.049651	0.11965	20.141	8.3577	5.0648	42.330	**13**
14	2.5785	0.38782	0.044345	0.11434	22.550	8.7455	5.4167	47.372	**14**
15	2.7590	0.36245	0.039795	0.10979	25.129	9.1079	5.7583	52.446	**15**
16	2.9522	0.33873	0.035858	0.10586	27.888	9.4466	6.0897	57.527	**16**
17	3.1588	0.31657	0.032425	0.10243	30.840	9.7632	6.4110	62.592	**17**
18	3.3799	0.29586	0.029413	0.09941	33.999	10.059	6.7225	67.622	**18**
19	3.6165	0.27651	0.026753	0.09675	37.379	10.336	7.0242	72.599	**19**
20	3.8697	0.25842	0.024393	0.09439	40.995	10.594	7.3163	77.509	**20**
21	4.1406	0.24151	0.022289	0.09229	44.865	10.836	7.5990	82.339	**21**
22	4.4304	0.22571	0.020406	0.09041	49.006	11.061	7.8725	87.079	**22**
23	4.7405	0.21095	0.018714	0.08871	53.436	11.272	8.1369	91.720	**23**
24	5.0724	0.19715	0.017189	0.08719	58.177	11.469	8.3923	96.255	**24**
25	5.4274	0.18425	0.015811	0.085811	63.249	11.654	8.6391	100.68	**25**
26	5.8074	0.17220	0.014561	0.084561	68.676	11.826	8.8773	104.98	**26**
27	6.2139	0.16093	0.013426	0.083426	74.484	11.987	9.1072	109.17	**27**
28	6.6488	0.15040	0.012392	0.082392	80.698	12.137	9.3289	113.23	**28**
29	7.1143	0.14056	0.011449	0.081449	87.347	12.278	9.5427	117.16	**29**
30	7.6123	0.13137	0.010586	0.080586	94.461	12.409	9.7487	120.97	**30**
31	8.1451	0.12277	0.009797	0.079797	102.07	12.532	9.9471	124.66	**31**
32	8.7153	0.11474	0.009073	0.079073	110.22	12.647	10.138	128.21	**32**
33	9.3253	0.10723	0.008408	0.078408	118.93	12.754	10.322	131.64	**33**
34	9.9781	0.10022	0.007797	0.077797	128.26	12.854	10.499	134.95	**34**
35	10.677	0.09366	0.007234	0.077234	138.24	12.948	10.669	138.14	**35**
40	14.974	0.066780	0.005009	0.075009	199.64	13.332	11.423	152.29	**40**
45	21.002	0.047613	0.003500	0.073500	285.75	13.606	12.036	163.76	**45**
50	29.457	0.033948	0.002460	0.072460	406.53	13.801	12.529	172.91	**50**
55	41.315	0.024204	0.001736	0.071736	575.93	13.940	12.921	180.12	**55**
60	57.946	0.017257	0.001229	0.071229	813.52	14.039	13.232	185.77	**60**
65	81.273	0.012304	0.000872	0.070872	1146.76	14.110	13.476	190.15	**65**
70	113.99	0.008773	0.000620	0.070620	1614.13	14.160	13.666	193.52	**70**
75	159.88	0.006255	0.000441	0.070441	2269.7	14.196	13.814	196.10	**75**
80	224.23	0.004460	0.000314	0.070314	3189.1	14.222	13.927	198.07	**80**
85	314.50	0.003180	0.000223	0.070223	4478.6	14.240	14.015	199.57	**85**
90	441.10	0.002267	0.000159	0.070159	6287.2	14.253	14.081	200.70	**90**
95	618.67	0.001616	0.000113	0.070113	8823.9	14.263	14.132	201.56	**95**
100	867.72	0.001152	0.000081	0.070081	12382	14.269	14.170	202.20	**100**

38 Discrete Compound Interest Factors

	Single Payment			Uniform Payment Series			Arithmetic Gradient		
i = 8%	Compound Amount Factor	Present Worth Factor	Sinking Fund Factor	Capital Recovery Factor	Compound Amount Factor	Present Worth Factor	Gradient Uniform Factor	Gradient Present Factor	*i* = 8%
N	*(F/P,i,N)*	*(P/F,i,N)*	*(A/F,i,N)*	*(A/P,i,n)*	*(F/A,i,N)*	*(P/A,i,N)*	*(A/G,i,N)*	*(P/G,i,N)*	*N*
1	1.0800	0.92593	1.0000	1.0800	1.0000	0.92593	0.00000	0.00000	**1**
2	1.1664	0.85734	0.48077	0.56077	2.0800	1.7833	0.48077	0.85734	**2**
3	1.2597	0.79383	0.30803	0.38803	3.2464	2.5771	0.94874	2.4450	**3**
4	1.3605	0.73503	0.22192	0.30192	4.5061	3.3121	1.4040	4.6501	**4**
5	1.4693	0.68058	0.17046	0.25046	5.8666	3.9927	1.8465	7.3724	**5**
6	1.5869	0.63017	0.13632	0.21632	7.3359	4.6229	2.2763	10.523	**6**
7	1.7138	0.58349	0.11207	0.19207	8.9228	5.2064	2.6937	14.024	**7**
8	1.8509	0.54027	0.094015	0.17401	10.637	5.7466	3.0985	17.806	**8**
9	1.9990	0.50025	0.080080	0.16008	12.488	6.2469	3.4910	21.808	**9**
10	2.1589	0.46319	0.069029	0.14903	14.487	6.7101	3.8713	25.977	**10**
11	2.3316	0.42888	0.060076	0.14008	16.645	7.1390	4.2395	30.266	**11**
12	2.5182	0.39711	0.052695	0.13270	18.977	7.5361	4.5957	34.634	**12**
13	2.7196	0.36770	0.046522	0.12652	21.495	7.9038	4.9402	39.046	**13**
14	2.9372	0.34046	0.041297	0.12130	24.215	8.2442	5.2731	43.472	**14**
15	3.1722	0.31524	0.036830	0.11683	27.152	8.5595	5.5945	47.886	**15**
16	3.4259	0.29189	0.032977	0.11298	30.324	8.8514	5.9046	52.264	**16**
17	3.7000	0.27027	0.029629	0.10963	33.750	9.1216	6.2037	56.588	**17**
18	3.9960	0.25025	0.026702	0.10670	37.450	9.3719	6.4920	60.843	**18**
19	4.3157	0.23171	0.024128	0.10413	41.446	9.6036	6.7697	65.013	**19**
20	4.6610	0.21455	0.021852	0.10185	45.762	9.8181	7.0369	69.090	**20**
21	5.0338	0.19866	0.019832	0.099832	50.423	10.017	7.2940	73.063	**21**
22	5.4365	0.18394	0.018032	0.098032	55.457	10.201	7.5412	76.926	**22**
23	5.8715	0.17032	0.016422	0.096422	60.893	10.371	7.7786	80.673	**23**
24	6.3412	0.15770	0.014978	0.094978	66.765	10.529	8.0066	84.300	**24**
25	6.8485	0.14602	0.013679	0.093679	73.106	10.675	8.2254	87.804	**25**
26	7.3964	0.13520	0.012507	0.092507	79.954	10.810	8.4352	91.184	**26**
27	7.9881	0.12519	0.011448	0.091448	87.351	10.935	8.6363	94.439	**27**
28	8.6271	0.11591	0.010489	0.090489	95.339	11.051	8.8289	97.569	**28**
29	9.3173	0.10733	0.009619	0.089619	103.97	11.158	9.0133	100.57	**29**
30	10.063	0.099377	0.008827	0.088827	113.28	11.258	9.1897	103.46	**30**
31	10.868	0.092016	0.008107	0.088107	123.35	11.350	9.3584	106.22	**31**
32	11.737	0.085200	0.007451	0.087451	134.21	11.435	9.5197	108.86	**32**
33	12.676	0.078889	0.006852	0.086852	145.95	11.514	9.6737	111.38	**33**
34	13.690	0.073045	0.006304	0.086304	158.63	11.587	9.8208	113.79	**34**
35	14.785	0.067635	0.005803	0.085803	172.32	11.655	9.9611	116.09	**35**
40	21.725	0.046031	0.003860	0.083860	259.06	11.925	10.570	126.04	**40**
45	31.920	0.031328	0.002587	0.082587	386.51	12.108	11.045	133.73	**45**
50	46.902	0.021321	0.001743	0.081743	573.77	12.233	11.411	139.59	**50**
55	68.914	0.014511	0.001178	0.081178	848.92	12.319	11.690	144.01	**55**
60	101.26	0.009876	0.000798	0.080798	1253.2	12.377	11.902	147.30	**60**
65	148.78	0.006721	0.000541	0.080541	1847.2	12.416	12.060	149.74	**65**
70	218.61	0.004574	0.000368	0.080368	2720.1	12.443	12.178	151.53	**70**
75	321.20	0.003113	0.000250	0.080250	4002.6	12.461	12.266	152.84	**75**
80	471.95	0.002119	0.000170	0.080170	5886.9	12.474	12.330	153.80	**80**
85	693.46	0.001442	0.000116	0.080116	8655.7	12.482	12.377	154.49	**85**
90	1018.9	0.000981	0.000079	0.080079	12724	12.488	12.412	154.99	**90**
95	1497.1	0.000668	0.000053	0.080053	18702	12.492	12.437	155.35	**95**
100	2199.8	0.000455	0.000036	0.080036	27485	12.494	12.455	155.61	**100**

Discrete Compound Interest Factors

	Single Payment		Uniform Payment Series				Arithmetic Gradient		
i = 9%	Compound Amount Factor	Present Worth Factor	Sinking Fund Factor	Capital Recovery Factor	Compound Amount Factor	Present Worth Factor	Gradient Uniform Factor	Gradient Present Factor	*i* = 9%
N	*(F/P,i,N)*	*(P/F,i,N)*	*(A/F,i,N)*	*(A/P,i,n)*	*(F/A,i,N)*	*(P/A,i,N)*	*(A/G,i,N)*	*(P/G,i,N)*	*N*
1	1.0900	0.91743	1.0000	1.0900	1.0000	0.91743	0.00000	0.00000	**1**
2	1.1881	0.84168	0.47847	0.56847	2.0900	1.7591	0.47847	0.84168	**2**
3	1.2950	0.77218	0.30505	0.39505	3.2781	2.5313	0.94262	2.3860	**3**
4	1.4116	0.70843	0.21867	0.30867	4.5731	3.2397	1.3925	4.5113	**4**
5	1.5386	0.64993	0.16709	0.25709	5.9847	3.8897	1.8282	7.1110	**5**
6	1.6771	0.59627	0.13292	0.22292	7.5233	4.4859	2.2498	10.092	**6**
7	1.8280	0.54703	0.10869	0.19869	9.2004	5.0330	2.6574	13.375	**7**
8	1.9926	0.50187	0.090674	0.18067	11.028	5.5348	3.0512	16.888	**8**
9	2.1719	0.46043	0.076799	0.16680	13.021	5.9952	3.4312	20.571	**9**
10	2.3674	0.42241	0.065820	0.15582	15.193	6.4177	3.7978	24.373	**10**
11	2.5804	0.38753	0.056947	0.14695	17.560	6.8052	4.1510	28.248	**11**
12	2.8127	0.35553	0.049651	0.13965	20.141	7.1607	4.4910	32.159	**12**
13	3.0658	0.32618	0.043567	0.13357	22.953	7.4869	4.8182	36.073	**13**
14	3.3417	0.29925	0.038433	0.12843	26.019	7.7862	5.1326	39.963	**14**
15	3.6425	0.27454	0.034059	0.12406	29.361	8.0607	5.4346	43.807	**15**
16	3.9703	0.25187	0.030300	0.12030	33.003	8.3126	5.7245	47.585	**16**
17	4.3276	0.23107	0.027046	0.11705	36.974	8.5436	6.0024	51.282	**17**
18	4.7171	0.21199	0.024212	0.11421	41.301	8.7556	6.2687	54.886	**18**
19	5.1417	0.19449	0.021730	0.11173	46.018	8.9501	6.5236	58.387	**19**
20	5.6044	0.17843	0.019546	0.10955	51.160	9.1285	6.7674	61.777	**20**
21	6.1088	0.16370	0.017617	0.10762	56.765	9.2922	7.0006	65.051	**21**
22	6.6586	0.15018	0.015905	0.10590	62.873	9.4424	7.2232	68.205	**22**
23	7.2579	0.13778	0.014382	0.10438	69.532	9.5802	7.4357	71.236	**23**
24	7.9111	0.12640	0.013023	0.10302	76.790	9.7066	7.6384	74.143	**24**
25	8.6231	0.11597	0.011806	0.10181	84.701	9.8226	7.8316	76.926	**25**
26	9.3992	0.10639	0.010715	0.10072	93.324	9.9290	8.0156	79.586	**26**
27	10.245	0.097608	0.009735	0.099735	102.72	10.027	8.1906	82.124	**27**
28	11.167	0.089548	0.008852	0.098852	112.97	10.116	8.3571	84.542	**28**
29	12.172	0.082155	0.008056	0.098056	124.14	10.198	8.5154	86.842	**29**
30	13.268	0.075371	0.007336	0.097336	136.31	10.274	8.6657	89.028	**30**
31	14.462	0.069148	0.006686	0.096686	149.58	10.343	8.8083	91.102	**31**
32	15.763	0.063438	0.006096	0.096096	164.04	10.406	8.9436	93.069	**32**
33	17.182	0.058200	0.005562	0.095562	179.80	10.464	9.0718	94.931	**33**
34	18.728	0.053395	0.005077	0.095077	196.98	10.518	9.1933	96.693	**34**
35	20.414	0.048986	0.004636	0.094636	215.71	10.567	9.3083	98.359	**35**
40	31.409	0.031838	0.002960	0.092960	337.88	10.757	9.7957	105.38	**40**
45	48.327	0.020692	0.001902	0.091902	525.86	10.881	10.160	110.56	**45**
50	74.358	0.013449	0.001227	0.091227	815.08	10.962	10.430	114.33	**50**
55	114.41	0.008741	0.000794	0.090794	1260.1	11.014	10.626	117.04	**55**
60	176.03	0.005681	0.000514	0.090514	1944.8	11.048	10.768	118.97	**60**
65	270.85	0.003692	0.000334	0.090334	2998.3	11.070	10.870	120.33	**65**
70	416.73	0.002400	0.000216	0.090216	4619.2	11.084	10.943	121.29	**70**
75	641.19	0.001560	0.000141	0.090141	7113.2	11.094	10.994	121.96	**75**
80	986.55	0.001014	0.000091	0.090091	10951	11.100	11.030	122.43	**80**
85	1517.9	0.000659	0.000059	0.090059	16855	11.104	11.055	122.75	**85**
90	2335.5	0.000428	0.000039	0.090039	25939	11.106	11.073	122.98	**90**
95	3593.5	0.000278	0.000025	0.090025	39917	11.108	11.085	123.13	**95**
100	5529.0	0.000181	0.000016	0.090016	61423	11.109	11.093	123.23	**100**

	Single Payment		Uniform Payment Series				Arithmetic Gradient		
i = 10%	Compound Amount Factor	Present Worth Factor	Sinking Fund Factor	Capital Recovery Factor	Compound Amount Factor	Present Worth Factor	Gradient Uniform Factor	Gradient Present Factor	*i* = 10%
N	*(F/P,i,N)*	*(P/F,i,N)*	*(A/F,i,N)*	*(A/P,i,n)*	*(F/A,i,N)*	*(P/A,i,N)*	*(A/G,i,N)*	*(P/G,i,N)*	*N*
1	1.1000	0.90909	1.0000	1.1000	1.0000	0.90909	0.00000	0.00000	**1**
2	1.2100	0.82645	0.47619	0.57619	2.1000	1.7355	0.47619	0.82645	**2**
3	1.3310	0.75131	0.30211	0.40211	3.3100	2.4869	0.93656	2.3291	**3**
4	1.4641	0.68301	0.21547	0.31547	4.6410	3.1699	1.3812	4.3781	**4**
5	1.6105	0.62092	0.16380	0.26380	6.1051	3.7908	1.8101	6.8618	**5**
6	1.7716	0.56447	0.12961	0.22961	7.7156	4.3553	2.2236	9.6842	**6**
7	1.9487	0.51316	0.10541	0.20541	9.4872	4.8684	2.6216	12.763	**7**
8	2.1436	0.46651	0.087444	0.18744	11.436	5.3349	3.0045	16.029	**8**
9	2.3579	0.42410	0.073641	0.17364	13.579	5.7590	3.3724	19.421	**9**
10	2.5937	0.38554	0.062745	0.16275	15.937	6.1446	3.7255	22.891	**10**
11	2.8531	0.35049	0.053963	0.15396	18.531	6.4951	4.0641	26.396	**11**
12	3.1384	0.31863	0.046763	0.14676	21.384	6.8137	4.3884	29.901	**12**
13	3.4523	0.28966	0.040779	0.14078	24.523	7.1034	4.6988	33.377	**13**
14	3.7975	0.26333	0.035746	0.13575	27.975	7.3667	4.9955	36.800	**14**
15	4.1772	0.23939	0.031474	0.13147	31.772	7.6061	5.2789	40.152	**15**
16	4.5950	0.21763	0.027817	0.12782	35.950	7.8237	5.5493	43.416	**16**
17	5.0545	0.19784	0.024664	0.12466	40.545	8.0216	5.8071	46.582	**17**
18	5.5599	0.17986	0.021930	0.12193	45.599	8.2014	6.0526	49.640	**18**
19	6.1159	0.16351	0.019547	0.11955	51.159	8.3649	6.2861	52.583	**19**
20	6.7275	0.14864	0.017460	0.11746	57.275	8.5136	6.5081	55.407	**20**
21	7.4002	0.13513	0.015624	0.11562	64.002	8.6487	6.7189	58.110	**21**
22	8.1403	0.12285	0.014005	0.11401	71.403	8.7715	6.9189	60.689	**22**
23	8.9543	0.11168	0.012572	0.11257	79.543	8.8832	7.1085	63.146	**23**
24	9.8497	0.10153	0.011300	0.11130	88.497	8.9847	7.2881	65.481	**24**
25	10.835	0.092296	0.010168	0.11017	98.347	9.0770	7.4580	67.696	**25**
26	11.918	0.083905	0.009159	0.10916	109.18	9.1609	7.6186	69.794	**26**
27	13.110	0.076278	0.008258	0.10826	121.10	9.2372	7.7704	71.777	**27**
28	14.421	0.069343	0.007451	0.10745	134.21	9.3066	7.9137	73.650	**28**
29	15.863	0.063039	0.006728	0.10673	148.63	9.3696	8.0489	75.415	**29**
30	17.449	0.057309	0.006079	0.10608	164.49	9.4269	8.1762	77.077	**30**
31	19.194	0.052099	0.005496	0.10550	181.94	9.4790	8.2962	78.640	**31**
32	21.114	0.047362	0.004972	0.10497	201.14	9.5264	8.4091	80.108	**32**
33	23.225	0.043057	0.004499	0.10450	222.25	9.5694	8.5152	81.486	**33**
34	25.548	0.039143	0.004074	0.10407	245.48	9.6086	8.6149	82.777	**34**
35	28.102	0.035584	0.003690	0.10369	271.02	9.6442	8.7086	83.987	**35**
40	45.259	0.022095	0.002259	0.10226	442.59	9.7791	9.0962	88.953	**40**
45	72.890	0.013719	0.001391	0.10139	718.90	9.8628	9.3740	92.454	**45**
50	117.39	0.008519	0.000859	0.10086	1163.9	9.9148	9.5704	94.889	**50**
55	189.06	0.005289	0.000532	0.10053	1880.6	9.9471	9.7075	96.562	**55**
60	304.48	0.003284	0.000330	0.10033	3034.8	9.9672	9.8023	97.701	**60**
65	490.37	0.002039	0.000204	0.10020	4893.7	9.9796	9.8672	98.471	**65**
70	789.75	0.001266	0.000127	0.10013	7887.5	9.9873	9.9113	98.987	**70**
75	1271.9	0.000786	0.000079	0.10008	12709	9.9921	9.9410	99.332	**75**
80	2048.4	0.000488	0.000049	0.10005	20474	9.9951	9.9609	99.561	**80**
85	3299.0	0.000303	0.000030	0.10003	32980	9.9970	9.9742	99.712	**85**
90	5313.0	0.000188	0.000019	0.10002	53120	9.9981	9.9831	99.812	**90**
95	8556.7	0.000117	0.000012	0.10001	85557	9.9988	9.9889	99.877	**95**
100	13781	0.000073	0.000007	0.10001	137796	9.9993	9.9927	99.920	**100**

Discrete Compound Interest Factors

	Single Payment		Uniform Payment Series				Arithmetic Gradient		
i = 12%	Compound Amount Factor	Present Worth Factor	Sinking Fund Factor	Capital Recovery Factor	Compound Amount Factor	Present Worth Factor	Gradient Uniform Factor	Gradient Present Factor	*i* = 12%
N	*(F/P,i,N)*	*(P/F,i,N)*	*(A/F,i,N)*	*(A/P,i,n)*	*(F/A,i,N)*	*(P/A,i,N)*	*(A/G,i,N)*	*(P/G,i,N)*	*N*
1	1.1200	0.89286	1.0000	1.1200	1.0000	0.89286	0.00000	0.00000	**1**
2	1.2544	0.79719	0.47170	0.59170	2.1200	1.6901	0.47170	0.79719	**2**
3	1.4049	0.71178	0.29635	0.41635	3.3744	2.4018	0.92461	2.2208	**3**
4	1.5735	0.63552	0.20923	0.32923	4.7793	3.0373	1.3589	4.1273	**4**
5	1.7623	0.56743	0.15741	0.27741	6.3528	3.6048	1.7746	6.3970	**5**
6	1.9738	0.50663	0.12323	0.24323	8.1152	4.1114	2.1720	8.9302	**6**
7	2.2107	0.45235	0.099118	0.21912	10.089	4.5638	2.5515	11.644	**7**
8	2.4760	0.40388	0.081303	0.20130	12.300	4.9676	2.9131	14.471	**8**
9	2.7731	0.36061	0.067679	0.18768	14.776	5.3282	3.2574	17.356	**9**
10	3.1058	0.32197	0.056984	0.17698	17.549	5.6502	3.5847	20.254	**10**
11	3.4785	0.28748	0.048415	0.16842	20.655	5.9377	3.8953	23.129	**11**
12	3.8960	0.25668	0.041437	0.16144	24.133	6.1944	4.1897	25.952	**12**
13	4.3635	0.22917	0.035677	0.15568	28.029	6.4235	4.4683	28.702	**13**
14	4.8871	0.20462	0.030871	0.15087	32.393	6.6282	4.7317	31.362	**14**
15	5.4736	0.18270	0.026824	0.14682	37.280	6.8109	4.9803	33.920	**15**
16	6.1304	0.16312	0.023390	0.14339	42.753	6.9740	5.2147	36.367	**16**
17	6.8660	0.14564	0.020457	0.14046	48.884	7.1196	5.4353	38.697	**17**
18	7.6900	0.13004	0.017937	0.13794	55.750	7.2497	5.6427	40.908	**18**
19	8.6128	0.11611	0.015763	0.13576	63.440	7.3658	5.8375	42.998	**19**
20	9.6463	0.10367	0.013879	0.13388	72.052	7.4694	6.0202	44.968	**20**
21	10.804	0.092560	0.012240	0.13224	81.699	7.5620	6.1913	46.819	**21**
22	12.100	0.082643	0.010811	0.13081	92.503	7.6446	6.3514	48.554	**22**
23	13.552	0.073788	0.009560	0.12956	104.60	7.7184	6.5010	50.178	**23**
24	15.179	0.065882	0.008463	0.12846	118.16	7.7843	6.6406	51.693	**24**
25	17.000	0.058823	0.007500	0.12750	133.33	7.8431	6.7708	53.105	**25**
26	19.040	0.052521	0.006652	0.12665	150.33	7.8957	6.8921	54.418	**26**
27	21.325	0.046894	0.005904	0.12590	169.37	7.9426	7.0049	55.637	**27**
28	23.884	0.041869	0.005244	0.12524	190.70	7.9844	7.1098	56.767	**28**
29	26.750	0.037383	0.004660	0.12466	214.58	8.0218	7.2071	57.814	**29**
30	29.960	0.033378	0.004144	0.12414	241.33	8.0552	7.2974	58.782	**30**
31	33.555	0.029802	0.003686	0.12369	271.29	8.0850	7.3811	59.676	**31**
32	37.582	0.026609	0.003280	0.12328	304.85	8.1116	7.4586	60.501	**32**
33	42.092	0.023758	0.002920	0.12292	342.43	8.1354	7.5302	61.261	**33**
34	47.143	0.021212	0.002601	0.12260	384.52	8.1566	7.5965	61.961	**34**
35	52.800	0.018940	0.002317	0.12232	431.66	8.1755	7.6577	62.605	**35**
40	93.051	0.010747	0.001304	0.12130	767.09	8.2438	7.8988	65.116	**40**
45	163.99	0.006098	0.000736	0.12074	1358.2	8.2825	8.0572	66.734	**45**
50	289.00	0.003460	0.000417	0.12042	2400.0	8.3045	8.1597	67.762	**50**
55	509.32	0.001963	0.000236	0.12024	4236.0	8.3170	8.2251	68.408	**55**
60	897.60	0.001114	0.000134	0.12013	7471.6	8.3240	8.2664	68.810	**60**
65	1581.9	0.000632	0.000076	0.12008	13174	8.3281	8.2922	69.058	**65**
70	2787.8	0.000359	0.000043	0.12004	23223	8.3303	8.3082	69.210	**70**
75	4913.1	0.000204	0.000024	0.12002	40934	8.3316	8.3181	69.303	**75**
80	8658.5	0.000115	0.000014	0.12001	72146	8.3324	8.3241	69.359	**80**
85	15259	0.000066	0.000008	0.12001	127152	8.3328	8.3278	69.393	**85**
90	26892	0.000037	0.000004	0.12000	224091	8.3330	8.3300	69.414	**90**
95	47393	0.000021	0.000003	0.12000	394931	8.3332	8.3313	69.426	**95**
100	83522	0.000012	0.000001	0.12000	696011	8.3332	8.3321	69.434	**100**

Discrete Compound Interest Factors

	Single Payment		Uniform Payment Series				Arithmetic Gradient		
i = 15%	Compound Amount Factor	Present Worth Factor	Sinking Fund Factor	Capital Recovery Factor	Compound Amount Factor	Present Worth Factor	Gradient Uniform Factor	Gradient Present Factor	*i* = 15%
N	*(F/P,i,N)*	*(P/F,i,N)*	*(A/F,i,N)*	*(A/P,i,n)*	*(F/A,i,N)*	*(P/A,i,N)*	*(A/G,i,N)*	*(P/G,i,N)*	*N*
1	1.1500	0.86957	1.0000	1.1500	1.0000	0.86957	0.00000	0.00000	**1**
2	1.3225	0.75614	0.46512	0.61512	2.1500	1.6257	0.46512	0.75614	**2**
3	1.5209	0.65752	0.28798	0.43798	3.4725	2.2832	0.90713	2.0712	**3**
4	1.7490	0.57175	0.20027	0.35027	4.9934	2.8550	1.3263	3.7864	**4**
5	2.0114	0.49718	0.14832	0.29832	6.7424	3.3522	1.7228	5.7751	**5**
6	2.3131	0.43233	0.11424	0.26424	8.7537	3.7845	2.0972	7.9368	**6**
7	2.6600	0.37594	0.090360	0.24036	11.067	4.1604	2.4498	10.192	**7**
8	3.0590	0.32690	0.072850	0.22285	13.727	4.4873	2.7813	12.481	**8**
9	3.5179	0.28426	0.059574	0.20957	16.786	4.7716	3.0922	14.755	**9**
10	4.0456	0.24718	0.049252	0.19925	20.304	5.0188	3.3832	16.979	**10**
11	4.6524	0.21494	0.041069	0.19107	24.349	5.2337	3.6549	19.129	**11**
12	5.3503	0.18691	0.034481	0.18448	29.002	5.4206	3.9082	21.185	**12**
13	6.1528	0.16253	0.029110	0.17911	34.352	5.5831	4.1438	23.135	**13**
14	7.0757	0.14133	0.024688	0.17469	40.505	5.7245	4.3624	24.972	**14**
15	8.1371	0.12289	0.021017	0.17102	47.580	5.8474	4.5650	26.693	**15**
16	9.3576	0.10686	0.017948	0.16795	55.717	5.9542	4.7522	28.296	**16**
17	10.761	0.092926	0.015367	0.16537	65.075	6.0472	4.9251	29.783	**17**
18	12.375	0.080805	0.013186	0.16319	75.836	6.1280	5.0843	31.156	**18**
19	14.232	0.070265	0.011336	0.16134	88.212	6.1982	5.2307	32.421	**19**
20	16.367	0.061100	0.009761	0.15976	102.44	6.2593	5.3651	33.582	**20**
21	18.822	0.053131	0.008417	0.15842	118.81	6.3125	5.4883	34.645	**21**
22	21.645	0.046201	0.007266	0.15727	137.63	6.3587	5.6010	35.615	**22**
23	24.891	0.040174	0.006278	0.15628	159.28	6.3988	5.7040	36.499	**23**
24	28.625	0.034934	0.005430	0.15543	184.17	6.4338	5.7979	37.302	**24**
25	32.919	0.030378	0.004699	0.15470	212.79	6.4641	5.8834	38.031	**25**
26	37.857	0.026415	0.004070	0.15407	245.71	6.4906	5.9612	38.692	**26**
27	43.535	0.022970	0.003526	0.15353	283.57	6.5135	6.0319	39.289	**27**
28	50.066	0.019974	0.003057	0.15306	327.10	6.5335	6.0960	39.828	**28**
29	57.575	0.017369	0.002651	0.15265	377.17	6.5509	6.1541	40.315	**29**
30	66.212	0.015103	0.002300	0.15230	434.75	6.5660	6.2066	40.753	**30**
31	76.144	0.013133	0.001996	0.15200	500.96	6.5791	6.2541	41.147	**31**
32	87.565	0.011420	0.001733	0.15173	577.10	6.5905	6.2970	41.501	**32**
33	100.70	0.009931	0.001505	0.15150	664.67	6.6005	6.3357	41.818	**33**
34	115.80	0.008635	0.001307	0.15131	765.37	6.6091	6.3705	42.103	**34**
35	133.18	0.007509	0.001135	0.15113	881.17	6.6166	6.4019	42.359	**35**
40	267.86	0.003733	0.000562	0.15056	1779.1	6.6418	6.5168	43.283	**40**
45	538.77	0.001856	0.000279	0.15028	3585.1	6.6543	6.5830	43.805	**45**
50	1083.66	0.000923	0.000139	0.15014	7218	6.6605	6.6205	44.096	**50**
55	2179.62	0.000459	0.000069	0.15007	14524	6.6636	6.6414	44.256	**55**
60	4384.00	0.000228	0.000034	0.15003	29220	6.6651	6.6530	44.343	**60**
65	8817.8	0.000113	0.000017	0.15002	58779	6.6659	6.6593	44.390	**65**
70	17736	0.000056	0.000008	0.15001	118231	6.6663	6.6627	44.416	**70**
75	35673	0.000028	0.000004	0.15000	237812	6.6665	6.6646	44.429	**75**
80	71751	0.000014	0.000002	0.15000	478333	6.6666	6.6656	44.436	**80**
85	144317	0.000007	0.000001	0.15000	962104	6.6666	6.6661	44.440	**85**
90	290272	0.000003	0.000001	0.15000	1935142	6.6666	6.6664	44.442	**90**
95	583841	0.000002	0.000000	0.15000	3892269	6.6667	6.6665	44.443	**95**
100	1174313	0.000001	0.000000	0.15000	7828750	6.6667	6.6666	44.444	**100**

	Single Payment		Uniform Payment Series				Arithmetic Gradient		
i = 18%	Compound Amount Factor	Present Worth Factor	Sinking Fund Factor	Capital Recovery Factor	Compound Amount Factor	Present Worth Factor	Gradient Uniform Factor	Gradient Present Factor	*i* = 18%
N	*(F/P,i,N)*	*(P/F,i,N)*	*(A/F,i,N)*	*(A/P,i,n)*	*(F/A,i,N)*	*(P/A,i,N)*	*(A/G,i,N)*	*(P/G,i,N)*	*N*
1	1.1800	0.84746	1.0000	1.1800	1.0000	0.84746	0.00000	0.00000	**1**
2	1.3924	0.71818	0.45872	0.63872	2.1800	1.5656	0.45872	0.71818	**2**
3	1.6430	0.60863	0.27992	0.45992	3.5724	2.1743	0.89016	1.9354	**3**
4	1.9388	0.51579	0.19174	0.37174	5.2154	2.6901	1.2947	3.4828	**4**
5	2.2878	0.43711	0.13978	0.31978	7.1542	3.1272	1.6728	5.2312	**5**
6	2.6996	0.37043	0.10591	0.28591	9.4420	3.4976	2.0252	7.0834	**6**
7	3.1855	0.31393	0.082362	0.26236	12.142	3.8115	2.3526	8.9670	**7**
8	3.7589	0.26604	0.065244	0.24524	15.327	4.0776	2.6558	10.829	**8**
9	4.4355	0.22546	0.052395	0.23239	19.086	4.3030	2.9358	12.633	**9**
10	5.2338	0.19106	0.042515	0.22251	23.521	4.4941	3.1936	14.352	**10**
11	6.1759	0.16192	0.034776	0.21478	28.755	4.6560	3.4303	15.972	**11**
12	7.2876	0.13722	0.028628	0.20863	34.931	4.7932	3.6470	17.481	**12**
13	8.5994	0.11629	0.023686	0.20369	42.219	4.9095	3.8449	18.877	**13**
14	10.147	0.098549	0.019678	0.19968	50.818	5.0081	4.0250	20.158	**14**
15	11.974	0.083516	0.016403	0.19640	60.965	5.0916	4.1887	21.327	**15**
16	14.129	0.070776	0.013710	0.19371	72.939	5.1624	4.3369	22.389	**16**
17	16.672	0.059980	0.011485	0.19149	87.068	5.2223	4.4708	23.348	**17**
18	19.673	0.050830	0.009639	0.18964	103.74	5.2732	4.5916	24.212	**18**
19	23.214	0.043077	0.008103	0.18810	123.41	5.3162	4.7003	24.988	**19**
20	27.393	0.036506	0.006820	0.18682	146.63	5.3527	4.7978	25.681	**20**
21	32.324	0.030937	0.005746	0.18575	174.02	5.3837	4.8851	26.300	**21**
22	38.142	0.026218	0.004846	0.18485	206.34	5.4099	4.9632	26.851	**22**
23	45.008	0.022218	0.004090	0.18409	244.49	5.4321	5.0329	27.339	**23**
24	53.109	0.018829	0.003454	0.18345	289.49	5.4509	5.0950	27.772	**24**
25	62.669	0.015957	0.002919	0.18292	342.60	5.4669	5.1502	28.155	**25**
26	73.949	0.013523	0.002467	0.18247	405.27	5.4804	5.1991	28.494	**26**
27	87.260	0.011460	0.002087	0.18209	479.22	5.4919	5.2425	28.791	**27**
28	102.97	0.009712	0.001765	0.18177	566.48	5.5016	5.2810	29.054	**28**
29	121.50	0.008230	0.001494	0.18149	669.45	5.5098	5.3149	29.284	**29**
30	143.37	0.006975	0.001264	0.18126	790.95	5.5168	5.3448	29.486	**30**
31	169.18	0.005911	0.001070	0.18107	934.32	5.5227	5.3712	29.664	**31**
32	199.63	0.005009	0.000906	0.18091	1103.5	5.5277	5.3945	29.819	**32**
33	235.56	0.004245	0.000767	0.18077	1303.1	5.5320	5.4149	29.955	**33**
34	277.96	0.003598	0.000650	0.18065	1538.7	5.5356	5.4328	30.074	**34**
35	328.00	0.003049	0.000550	0.18055	1816.7	5.5386	5.4485	30.177	**35**
40	750.38	0.001333	0.000240	0.18024	4163.2	5.5482	5.5022	30.527	**40**
45	1716.7	0.000583	0.000105	0.18010	9531.6	5.5523	5.5293	30.701	**45**
50	3927.4	0.000255	0.000046	0.18005	21813	5.5541	5.5428	30.786	**50**
55	8984.8	0.000111	0.000020	0.18002	49910	5.5549	5.5494	30.827	**55**
60	20555	0.000049	0.000009	0.18001	114190	5.5553	5.5526	30.846	**60**

Discrete Compound Interest Factors

	Single Payment		Uniform Payment Series				Arithmetic Gradient		
i = 20%	Compound Amount Factor	Present Worth Factor	Sinking Fund Factor	Capital Recovery Factor	Compound Amount Factor	Present Worth Factor	Gradient Uniform Factor	Gradient Present Factor	*i* = 20%
N	*(F/P,i,N)*	*(P/F,i,N)*	*(A/F,i,N)*	*(A/P,i,n)*	*(F/A,i,N)*	*(P/A,i,N)*	*(A/G,i,N)*	*(P/G,i,N)*	*N*
1	1.2000	0.83333	1.0000	1.2000	1.0000	0.83333	0.00000	0.00000	**1**
2	1.4400	0.69444	0.45455	0.65455	2.2000	1.5278	0.45455	0.69444	**2**
3	1.7280	0.57870	0.27473	0.47473	3.6400	2.1065	0.87912	1.8519	**3**
4	2.0736	0.48225	0.18629	0.38629	5.3680	2.5887	1.2742	3.2986	**4**
5	2.4883	0.40188	0.13438	0.33438	7.4416	2.9906	1.6405	4.9061	**5**
6	2.9860	0.33490	0.10071	0.30071	9.9299	3.3255	1.9788	6.5806	**6**
7	3.5832	0.27908	0.077424	0.27742	12.916	3.6046	2.2902	8.2551	**7**
8	4.2998	0.23257	0.060609	0.26061	16.499	3.8372	2.5756	9.8831	**8**
9	5.1598	0.19381	0.048079	0.24808	20.799	4.0310	2.8364	11.434	**9**
10	6.1917	0.16151	0.038523	0.23852	25.959	4.1925	3.0739	12.887	**10**
11	7.4301	0.13459	0.031104	0.23110	32.150	4.3271	3.2893	14.233	**11**
12	8.9161	0.11216	0.025265	0.22526	39.581	4.4392	3.4841	15.467	**12**
13	10.699	0.093464	0.020620	0.22062	48.497	4.5327	3.6597	16.588	**13**
14	12.839	0.077887	0.016893	0.21689	59.196	4.6106	3.8175	17.601	**14**
15	15.407	0.064905	0.013882	0.21388	72.035	4.6755	3.9588	18.509	**15**
16	18.488	0.054088	0.011436	0.21144	87.442	4.7296	4.0851	19.321	**16**
17	22.186	0.045073	0.009440	0.20944	105.93	4.7746	4.1976	20.042	**17**
18	26.623	0.037561	0.007805	0.20781	128.12	4.8122	4.2975	20.680	**18**
19	31.948	0.031301	0.006462	0.20646	154.74	4.8435	4.3861	21.244	**19**
20	38.338	0.026084	0.005357	0.20536	186.69	4.8696	4.4643	21.739	**20**
21	46.005	0.021737	0.004444	0.20444	225.03	4.8913	4.5334	22.174	**21**
22	55.206	0.018114	0.003690	0.20369	271.03	4.9094	4.5941	22.555	**22**
23	66.247	0.015095	0.003065	0.20307	326.24	4.9245	4.6475	22.887	**23**
24	79.497	0.012579	0.002548	0.20255	392.48	4.9371	4.6943	23.176	**24**
25	95.396	0.010483	0.002119	0.20212	471.98	4.9476	4.7352	23.428	**25**
26	114.48	0.008735	0.001762	0.20176	567.38	4.9563	4.7709	23.646	**26**
27	137.37	0.007280	0.001467	0.20147	681.85	4.9636	4.8020	23.835	**27**
28	164.84	0.006066	0.001221	0.20122	819.22	4.9697	4.8291	23.999	**28**
29	197.81	0.005055	0.001016	0.20102	984.07	4.9747	4.8527	24.141	**29**
30	237.38	0.004213	0.000846	0.20085	1181.9	4.9789	4.8731	24.263	**30**
31	284.85	0.003511	0.000705	0.20070	1419.3	4.9824	4.8908	24.368	**31**
32	341.82	0.002926	0.000587	0.20059	1704.1	4.9854	4.9061	24.459	**32**
33	410.19	0.002438	0.000489	0.20049	2045.9	4.9878	4.9194	24.537	**33**
34	492.22	0.002032	0.000407	0.20041	2456.1	4.9898	4.9308	24.604	**34**
35	590.67	0.001693	0.000339	0.20034	2948.3	4.9915	4.9406	24.661	**35**
40	1469.8	0.000680	0.000136	0.20014	7343.9	4.9966	4.9728	24.847	**40**
45	3657.3	0.000273	0.000055	0.20005	18281	4.9986	4.9877	24.932	**45**
50	9100.4	0.000110	0.000022	0.20002	45497	4.9995	4.9945	24.970	**50**
55	22645	0.000044	0.000009	0.20001	113219	4.9998	4.9976	24.987	**55**
60	56348	0.000018	0.000004	0.20000	281733	4.9999	4.9989	24.994	**60**

	Single Payment		Uniform Payment Series				Arithmetic Gradient		
i = 25%	Compound Amount Factor	Present Worth Factor	Sinking Fund Factor	Capital Recovery Factor	Compound Amount Factor	Present Worth Factor	Gradient Uniform Factor	Gradient Present Factor	*i* = 25%
N	*(F/P,i,N)*	*(P/F,i,N)*	*(A/F,i,N)*	*(A/P,i,n)*	*(F/A,i,N)*	*(P/A,i,N)*	*(A/G,i,N)*	*(P/G,i,N)*	*N*
1	1.2500	0.80000	1.0000	1.2500	1.0000	0.80000	0.00000	0.00000	**1**
2	1.5625	0.64000	0.44444	0.69444	2.2500	1.4400	0.44444	0.64000	**2**
3	1.9531	0.51200	0.26230	0.51230	3.8125	1.9520	0.85246	1.6640	**3**
4	2.4414	0.40960	0.17344	0.42344	5.7656	2.3616	1.2249	2.8928	**4**
5	3.0518	0.32768	0.12185	0.37185	8.2070	2.6893	1.5631	4.2035	**5**
6	3.8147	0.26214	0.08882	0.33882	11.259	2.9514	1.8683	5.5142	**6**
7	4.7684	0.20972	0.066342	0.31634	15.073	3.1611	2.1424	6.7725	**7**
8	5.9605	0.16777	0.050399	0.30040	19.842	3.3289	2.3872	7.9469	**8**
9	7.4506	0.13422	0.038756	0.28876	25.802	3.4631	2.6048	9.0207	**9**
10	9.3132	0.10737	0.030073	0.28007	33.253	3.5705	2.7971	9.9870	**10**
11	11.642	0.085899	0.023493	0.27349	42.566	3.6564	2.9663	10.846	**11**
12	14.552	0.068719	0.018448	0.26845	54.208	3.7251	3.1145	11.602	**12**
13	18.190	0.054976	0.014543	0.26454	68.760	3.7801	3.2437	12.262	**13**
14	22.737	0.043980	0.011501	0.26150	86.949	3.8241	3.3559	12.833	**14**
15	28.422	0.035184	0.009117	0.25912	109.69	3.8593	3.4530	13.326	**15**
16	35.527	0.028147	0.007241	0.25724	138.11	3.8874	3.5366	13.748	**16**
17	44.409	0.022518	0.005759	0.25576	173.64	3.9099	3.6084	14.108	**17**
18	55.511	0.018014	0.004586	0.25459	218.04	3.9279	3.6698	14.415	**18**
19	69.389	0.014412	0.003656	0.25366	273.56	3.9424	3.7222	14.674	**19**
20	86.736	0.011529	0.002916	0.25292	342.94	3.9539	3.7667	14.893	**20**
21	108.42	0.009223	0.002327	0.25233	429.68	3.9631	3.8045	15.078	**21**
22	135.53	0.007379	0.001858	0.25186	538.10	3.9705	3.8365	15.233	**22**
23	169.41	0.005903	0.001485	0.25148	673.63	3.9764	3.8634	15.362	**23**
24	211.76	0.004722	0.001186	0.25119	843.03	3.9811	3.8861	15.471	**24**
25	264.70	0.003778	0.000948	0.25095	1054.8	3.9849	3.9052	15.562	**25**
26	330.87	0.003022	0.000758	0.25076	1319.5	3.9879	3.9212	15.637	**26**
27	413.59	0.002418	0.000606	0.25061	1650.4	3.9903	3.9346	15.700	**27**
28	516.99	0.001934	0.000485	0.25048	2064.0	3.9923	3.9457	15.752	**28**
29	646.23	0.001547	0.000387	0.25039	2580.9	3.9938	3.9551	15.796	**29**
30	807.79	0.001238	0.000310	0.25031	3227.2	3.9950	3.9628	15.832	**30**
31	1009.7	0.000990	0.000248	0.25025	4035.0	3.9960	3.9693	15.861	**31**
32	1262.2	0.000792	0.000198	0.25020	5044.7	3.9968	3.9746	15.886	**32**
33	1577.7	0.000634	0.000159	0.25016	6306.9	3.9975	3.9791	15.906	**33**
34	1972.2	0.000507	0.000127	0.25013	7884.6	3.9980	3.9828	15.923	**34**
35	2465.2	0.000406	0.000101	0.25010	9856.8	3.9984	3.9858	15.937	**35**
40	7523.2	0.000133	0.000033	0.25003	30089	3.9995	3.9947	15.977	**40**
45	22959	0.000044	0.000011	0.25001	91831	3.9998	3.9980	15.991	**45**
50	70065	0.000014	0.000004	0.25000	280256	3.9999	3.9993	15.997	**50**
55	213821	0.000005	0.000001	0.25000	855281	4.0000	3.9997	15.999	**55**
60	652530	0.000002	0.000000	0.25000	2610118	4.0000	3.9999	16.000	**60**

Discrete Compound Interest Factors

	Single Payment		Uniform Payment Series				Arithmetic Gradient		
i = 30%	Compound Amount Factor	Present Worth Factor	Sinking Fund Factor	Capital Recovery Factor	Compound Amount Factor	Present Worth Factor	Gradient Uniform Factor	Gradient Present Factor	*i* = 30%
N	*(F/P,i,N)*	*(P/F,i,N)*	*(A/F,i,N)*	*(A/P,i,n)*	*(F/A,i,N)*	*(P/A,i,N)*	*(A/G,i,N)*	*(P/G,i,N)*	*N*
1	1.3000	0.76923	1.0000	1.3000	1.0000	0.76923	0.00000	0.00000	**1**
2	1.6900	0.59172	0.43478	0.73478	2.3000	1.3609	0.43478	0.59172	**2**
3	2.1970	0.45517	0.25063	0.55063	3.9900	1.8161	0.82707	1.5020	**3**
4	2.8561	0.35013	0.16163	0.46163	6.1870	2.1662	1.1783	2.5524	**4**
5	3.7129	0.26933	0.11058	0.41058	9.0431	2.4356	1.4903	3.6297	**5**
6	4.8268	0.20718	0.07839	0.37839	12.756	2.6427	1.7654	4.6656	**6**
7	6.2749	0.15937	0.056874	0.35687	17.583	2.8021	2.0063	5.6218	**7**
8	8.1573	0.12259	0.041915	0.34192	23.858	2.9247	2.2156	6.4800	**8**
9	10.604	0.094300	0.031235	0.33124	32.015	3.0190	2.3963	7.2343	**9**
10	13.786	0.072538	0.023463	0.32346	42.619	3.0915	2.5512	7.8872	**10**
11	17.922	0.055799	0.017729	0.31773	56.405	3.1473	2.6833	8.4452	**11**
12	23.298	0.042922	0.013454	0.31345	74.327	3.1903	2.7952	8.9173	**12**
13	30.288	0.033017	0.010243	0.31024	97.625	3.2233	2.8895	9.3135	**13**
14	39.374	0.025398	0.007818	0.30782	127.91	3.2487	2.9685	9.6437	**14**
15	51.186	0.019537	0.005978	0.30598	167.29	3.2682	3.0344	9.9172	**15**
16	66.542	0.015028	0.004577	0.30458	218.47	3.2832	3.0892	10.143	**16**
17	86.504	0.011560	0.003509	0.30351	285.01	3.2948	3.1345	10.328	**17**
18	112.46	0.008892	0.002692	0.30269	371.52	3.3037	3.1718	10.479	**18**
19	146.19	0.006840	0.002066	0.30207	483.97	3.3105	3.2025	10.602	**19**
20	190.05	0.005262	0.001587	0.30159	630.17	3.3158	3.2275	10.702	**20**
21	247.06	0.004048	0.001219	0.30122	820.22	3.3198	3.2480	10.783	**21**
22	321.18	0.003113	0.000937	0.30094	1067.3	3.3230	3.2646	10.848	**22**
23	417.54	0.002395	0.000720	0.30072	1388.5	3.3254	3.2781	10.901	**23**
24	542.80	0.001842	0.000554	0.30055	1806.0	3.3272	3.2890	10.943	**24**
25	705.64	0.001417	0.000426	0.30043	2348.8	3.3286	3.2979	10.977	**25**
26	917.33	0.001090	0.000327	0.30033	3054.4	3.3297	3.3050	11.005	**26**
27	1192.5	0.000839	0.000252	0.30025	3971.8	3.3305	3.3107	11.026	**27**
28	1550.3	0.000645	0.000194	0.30019	5164.3	3.3312	3.3153	11.044	**28**
29	2015.4	0.000496	0.000149	0.30015	6714.6	3.3317	3.3189	11.058	**29**
30	2620.0	0.000382	0.000115	0.30011	8730.0	3.3321	3.3219	11.069	**30**
31	3406.0	0.000294	0.000088	0.30009	11350	3.3324	3.3242	11.078	**31**
32	4427.8	0.000226	0.000068	0.30007	14756	3.3326	3.3261	11.085	**32**
33	5756.1	0.000174	0.000052	0.30005	19184	3.3328	3.3276	11.090	**33**
34	7483.0	0.000134	0.000040	0.30004	24940	3.3329	3.3288	11.094	**34**
35	9727.9	0.000103	0.000031	0.30003	32423	3.3330	3.3297	11.098	**35**
40	36119	0.000028	0.000008	0.30001	120393	3.3332	3.3322	11.107	**40**
45	134107	0.000007	0.000002	0.30000	447019	3.3333	3.3330	11.110	**45**
50	497929	0.000002	0.000001	0.30000	1659761	3.3333	3.3332	11.111	**50**

Discrete Compound Interest Factors

	Single Payment		Uniform Payment Series				Arithmetic Gradient		
i = 35%	Compound Amount Factor	Present Worth Factor	Sinking Fund Factor	Capital Recovery Factor	Compound Amount Factor	Present Worth Factor	Gradient Uniform Factor	Gradient Present Factor	*i* = 35%
N	*(F/P,i,N)*	*(P/F,i,N)*	*(A/F,i,N)*	*(A/P,i,n)*	*(F/A,i,N)*	*(P/A,i,N)*	*(A/G,i,N)*	*(P/G,i,N)*	*N*
1	1.3500	0.74074	1.0000	1.3500	1.0000	0.74074	0.00000	0.00000	**1**
2	1.8225	0.54870	0.42553	0.77553	2.3500	1.2894	0.42553	0.54870	**2**
3	2.4604	0.40644	0.23966	0.58966	4.1725	1.6959	0.80288	1.3616	**3**
4	3.3215	0.30107	0.15076	0.50076	6.6329	1.9969	1.1341	2.2648	**4**
5	4.4840	0.22301	0.10046	0.45046	9.9544	2.2200	1.4220	3.1568	**5**
6	6.0534	0.16520	0.069260	0.41926	14.438	2.3852	1.6698	3.9828	**6**
7	8.1722	0.12237	0.048800	0.39880	20.492	2.5075	1.8811	4.7170	**7**
8	11.032	0.090642	0.034887	0.38489	28.664	2.5982	2.0597	5.3515	**8**
9	14.894	0.067142	0.025191	0.37519	39.696	2.6653	2.2094	5.8886	**9**
10	20.107	0.049735	0.018318	0.36832	54.590	2.7150	2.3338	6.3363	**10**
11	27.144	0.036841	0.013387	0.36339	74.697	2.7519	2.4364	6.7047	**11**
12	36.644	0.027289	0.009819	0.35982	101.84	2.7792	2.5205	7.0049	**12**
13	49.470	0.020214	0.007221	0.35722	138.48	2.7994	2.5889	7.2474	**13**
14	66.784	0.014974	0.005320	0.35532	187.95	2.8144	2.6443	7.4421	**14**
15	90.158	0.011092	0.003926	0.35393	254.74	2.8255	2.6889	7.5974	**15**
16	121.71	0.008216	0.002899	0.35290	344.90	2.8337	2.7246	7.7206	**16**
17	164.31	0.006086	0.002143	0.35214	466.61	2.8398	2.7530	7.8180	**17**
18	221.82	0.004508	0.001585	0.35158	630.92	2.8443	2.7756	7.8946	**18**
19	299.46	0.003339	0.001173	0.35117	852.75	2.8476	2.7935	7.9547	**19**
20	404.27	0.002474	0.000868	0.35087	1152.2	2.8501	2.8075	8.0017	**20**
21	545.77	0.001832	0.000642	0.35064	1556.5	2.8519	2.8186	8.0384	**21**
22	736.79	0.001357	0.000476	0.35048	2102.3	2.8533	2.8272	8.0669	**22**
23	994.66	0.001005	0.000352	0.35035	2839.0	2.8543	2.8340	8.0890	**23**
24	1342.8	0.000745	0.000261	0.35026	3833.7	2.8550	2.8393	8.1061	**24**
25	1812.8	0.000552	0.000193	0.35019	5176.5	2.8556	2.8433	8.1194	**25**
26	2447.2	0.000409	0.000143	0.35014	6989.3	2.8560	2.8465	8.1296	**26**
27	3303.8	0.000303	0.000106	0.35011	9436.5	2.8563	2.8490	8.1374	**27**
28	4460.1	0.000224	0.000078	0.35008	12740	2.8565	2.8509	8.1435	**28**
29	6021.1	0.000166	0.000058	0.35006	17200	2.8567	2.8523	8.1481	**29**
30	8128.5	0.000123	0.000043	0.35004	23222	2.8568	2.8535	8.1517	**30**
31	10974	0.000091	0.000032	0.35003	31350	2.8569	2.8543	8.1545	**31**
32	14814	0.000068	0.000024	0.35002	42324	2.8569	2.8550	8.1565	**32**
33	19999	0.000050	0.000018	0.35002	57138	2.8570	2.8555	8.1581	**33**
34	26999	0.000037	0.000013	0.35001	77137	2.8570	2.8559	8.1594	**34**
35	36449	0.000027	0.000010	0.35001	104136	2.8571	2.8562	8.1603	**35**

Discrete Compound Interest Factors

	Single Payment		Uniform Payment Series				Arithmetic Gradient		
i = 40%	Compound Amount Factor	Present Worth Factor	Sinking Fund Factor	Capital Recovery Factor	Compound Amount Factor	Present Worth Factor	Gradient Uniform Factor	Gradient Present Factor	*i* = 40%
N	*(F/P,i,N)*	*(P/F,i,N)*	*(A/F,i,N)*	*(A/P,i,n)*	*(F/A,i,N)*	*(P/A,i,N)*	*(A/G,i,N)*	*(P/G,i,N)*	*N*
1	1.4000	0.71429	1.0000	1.4000	1.0000	0.71429	0.00000	0.00000	**1**
2	1.9600	0.51020	0.41667	0.81667	2.4000	1.2245	0.41667	0.51020	**2**
3	2.7440	0.36443	0.22936	0.62936	4.3600	1.5889	0.77982	1.2391	**3**
4	3.8416	0.26031	0.14077	0.54077	7.1040	1.8492	1.0923	2.0200	**4**
5	5.3782	0.18593	0.091361	0.49136	10.946	2.0352	1.3580	2.7637	**5**
6	7.5295	0.13281	0.061260	0.46126	16.324	2.1680	1.5811	3.4278	**6**
7	10.541	0.094865	0.041923	0.44192	23.853	2.2628	1.7664	3.9970	**7**
8	14.758	0.067760	0.029074	0.42907	34.395	2.3306	1.9185	4.4713	**8**
9	20.661	0.048400	0.020345	0.42034	49.153	2.3790	2.0422	4.8585	**9**
10	28.925	0.034572	0.014324	0.41432	69.814	2.4136	2.1419	5.1696	**10**
11	40.496	0.024694	0.010128	0.41013	98.739	2.4383	2.2215	5.4166	**11**
12	56.694	0.017639	0.007182	0.40718	139.23	2.4559	2.2845	5.6106	**12**
13	79.371	0.012599	0.005104	0.40510	195.93	2.4685	2.3341	5.7618	**13**
14	111.12	0.008999	0.003632	0.40363	275.30	2.4775	2.3729	5.8788	**14**
15	155.57	0.006428	0.002588	0.40259	386.42	2.4839	2.4030	5.9688	**15**
16	217.80	0.004591	0.001845	0.40185	541.99	2.4885	2.4262	6.0376	**16**
17	304.91	0.003280	0.001316	0.40132	759.78	2.4918	2.4441	6.0901	**17**
18	426.88	0.002343	0.000939	0.40094	1064.70	2.4941	2.4577	6.1299	**18**
19	597.63	0.001673	0.000670	0.40067	1491.58	2.4958	2.4682	6.1601	**19**
20	836.68	0.001195	0.000479	0.40048	2089.2	2.4970	2.4761	6.1828	**20**
21	1171.4	0.000854	0.000342	0.40034	2925.9	2.4979	2.4821	6.1998	**21**
22	1639.9	0.000610	0.000244	0.40024	4097.2	2.4985	2.4866	6.2127	**22**
23	2295.9	0.000436	0.000174	0.40017	5737.1	2.4989	2.4900	6.2222	**23**
24	3214.2	0.000311	0.000124	0.40012	8033.0	2.4992	2.4925	6.2294	**24**
25	4499.9	0.000222	0.000089	0.40009	11247	2.4994	2.4944	6.2347	**25**
26	6299.8	0.000159	0.000064	0.40006	15747	2.4996	2.4959	6.2387	**26**
27	8819.8	0.000113	0.000045	0.40005	22047	2.4997	2.4969	6.2416	**27**
28	12348	0.000081	0.000032	0.40003	30867	2.4998	2.4977	6.2438	**28**
29	17287	0.000058	0.000023	0.40002	43214	2.4999	2.4983	6.2454	**29**
30	24201	0.000041	0.000017	0.40002	60501	2.4999	2.4988	6.2466	**30**
31	33882	0.000030	0.000012	0.40001	84703	2.4999	2.4991	6.2475	**31**
32	47435	0.000021	0.000008	0.40001	118585	2.4999	2.4993	6.2482	**32**
33	66409	0.000015	0.000006	0.40001	166019	2.5000	2.4995	6.2487	**33**
34	92972	0.000011	0.000004	0.40000	232428	2.5000	2.4996	6.2490	**34**
35	130161	0.000008	0.000003	0.40000	325400	2.5000	2.4997	6.2493	**35**

Discrete Compound Interest Factors

	Single Payment		Uniform Payment Series				Arithmetic Gradient		
i = 45%	Compound Amount Factor	Present Worth Factor	Sinking Fund Factor	Capital Recovery Factor	Compound Amount Factor	Present Worth Factor	Gradient Uniform Factor	Gradient Present Factor	*i* = 45%
N	*(F/P,i,N)*	*(P/F,i,N)*	*(A/F,i,N)*	*(A/P,i,n)*	*(F/A,i,N)*	*(P/A,i,N)*	*(A/G,i,N)*	*(P/G,i,N)*	*N*
1	1.4500	0.68966	1.0000	1.4500	1.0000	0.68966	0.00000	0.00000	**1**
2	2.1025	0.47562	0.40816	0.85816	2.4500	1.1653	0.40816	0.47562	**2**
3	3.0486	0.32802	0.21966	0.66966	4.5525	1.4933	0.75783	1.1317	**3**
4	4.4205	0.22622	0.13156	0.58156	7.6011	1.7195	1.0528	1.8103	**4**
5	6.4097	0.15601	0.083183	0.53318	12.022	1.8755	1.2980	2.4344	**5**
6	9.2941	0.10759	0.054255	0.50426	18.431	1.9831	1.4988	2.9723	**6**
7	13.476	0.074203	0.036068	0.48607	27.725	2.0573	1.6612	3.4176	**7**
8	19.541	0.051175	0.024271	0.47427	41.202	2.1085	1.7907	3.7758	**8**
9	28.334	0.035293	0.016463	0.46646	60.743	2.1438	1.8930	4.0581	**9**
10	41.085	0.024340	0.011226	0.46123	89.077	2.1681	1.9728	4.2772	**10**
11	59.573	0.016786	0.007683	0.45768	130.16	2.1849	2.0344	4.4450	**11**
12	86.381	0.011577	0.005271	0.45527	189.73	2.1965	2.0817	4.5724	**12**
13	125.25	0.007984	0.003622	0.45362	276.12	2.2045	2.1176	4.6682	**13**
14	181.62	0.005506	0.002491	0.45249	401.37	2.2100	2.1447	4.7398	**14**
15	263.34	0.003797	0.001715	0.45172	582.98	2.2138	2.1650	4.7929	**15**
16	381.85	0.002619	0.001182	0.45118	846.32	2.2164	2.1802	4.8322	**16**
17	553.68	0.001806	0.000814	0.45081	1228.2	2.2182	2.1915	4.8611	**17**
18	802.83	0.001246	0.000561	0.45056	1781.8	2.2195	2.1998	4.8823	**18**
19	1164.1	0.000859	0.000387	0.45039	2584.7	2.2203	2.2059	4.8978	**19**
20	1688.0	0.000592	0.000267	0.45027	3748.8	2.2209	2.2104	4.9090	**20**
21	2447.5	0.000409	0.000184	0.45018	5436.7	2.2213	2.2136	4.9172	**21**
22	3548.9	0.000282	0.000127	0.45013	7884.3	2.2216	2.2160	4.9231	**22**
23	5145.9	0.000194	0.000087	0.45009	11433	2.2218	2.2178	4.9274	**23**
24	7461.6	0.000134	0.000060	0.45006	16579	2.2219	2.2190	4.9305	**24**
25	10819	0.000092	0.000042	0.45004	24041	2.2220	2.2199	4.9327	**25**
26	15688	0.000064	0.000029	0.45003	34860	2.2221	2.2206	4.9343	**26**
27	22748	0.000044	0.000020	0.45002	50548	2.2221	2.2210	4.9354	**27**
28	32984	0.000030	0.000014	0.45001	73296	2.2222	2.2214	4.9362	**28**
29	47827	0.000021	0.000009	0.45001	106280	2.2222	2.2216	4.9368	**29**
30	69349	0.000014	0.000006	0.45001	154107	2.2222	2.2218	4.9372	**30**
31	100556	0.000010	0.000004	0.45000	223456	2.2222	2.2219	4.9375	**31**
32	145806	0.000007	0.000003	0.45000	324012	2.2222	2.2220	4.9378	**32**
33	211419	0.000005	0.000002	0.45000	469818	2.2222	2.2221	4.9379	**33**
34	306558	0.000003	0.000001	0.45000	681237	2.2222	2.2221	4.9380	**34**
35	444509	0.000002	0.000001	0.45000	987794	2.2222	2.2221	4.9381	**35**

Discrete Compound Interest Factors

	Single Payment		Uniform Payment Series				Arithmetic Gradient		
i = 50%	Compound Amount Factor	Present Worth Factor	Sinking Fund Factor	Capital Recovery Factor	Compound Amount Factor	Present Worth Factor	Gradient Uniform Factor	Gradient Present Factor	*i* = 50%
N	*(F/P,i,N)*	*(P/F,i,N)*	*(A/F,i,N)*	*(A/P,i,n)*	*(F/A,i,N)*	*(P/A,i,N)*	*(A/G,i,N)*	*(P/G,i,N)*	*N*
1	1.5000	0.66667	1.0000	1.5000	1.0000	0.66667	0.00000	0.00000	**1**
2	2.2500	0.44444	0.40000	0.90000	2.5000	1.1111	0.40000	0.44444	**2**
3	3.3750	0.29630	0.21053	0.71053	4.7500	1.4074	0.73684	1.0370	**3**
4	5.0625	0.19753	0.12308	0.62308	8.1250	1.6049	1.0154	1.6296	**4**
5	7.5938	0.13169	0.075829	0.57583	13.188	1.7366	1.2417	2.1564	**5**
6	11.391	0.087791	0.048120	0.54812	20.781	1.8244	1.4226	2.5953	**6**
7	17.086	0.058528	0.031083	0.53108	32.172	1.8829	1.5648	2.9465	**7**
8	25.629	0.039018	0.020301	0.52030	49.258	1.9220	1.6752	3.2196	**8**
9	38.443	0.026012	0.013354	0.51335	74.887	1.9480	1.7596	3.4277	**9**
10	57.665	0.017342	0.008824	0.50882	113.33	1.9653	1.8235	3.5838	**10**
11	86.498	0.011561	0.005848	0.50585	171.00	1.9769	1.8713	3.6994	**11**
12	129.75	0.007707	0.003884	0.50388	257.49	1.9846	1.9068	3.7842	**12**
13	194.62	0.005138	0.002582	0.50258	387.24	1.9897	1.9329	3.8459	**13**
14	291.93	0.003425	0.001719	0.50172	581.86	1.9931	1.9519	3.8904	**14**
15	437.89	0.002284	0.001144	0.50114	873.79	1.9954	1.9657	3.9224	**15**
16	656.84	0.001522	0.000762	0.50076	1311.7	1.9970	1.9756	3.9452	**16**
17	985.26	0.001015	0.000508	0.50051	1968.5	1.9980	1.9827	3.9614	**17**
18	1477.9	0.000677	0.000339	0.50034	2953.8	1.9986	1.9878	3.9729	**18**
19	2216.8	0.000451	0.000226	0.50023	4431.7	1.9991	1.9914	3.9811	**19**
20	3325.3	0.000301	0.000150	0.50015	6648.5	1.9994	1.9940	3.9868	**20**
21	4987.9	0.000200	0.000100	0.50010	9973.8	1.9996	1.9958	3.9908	**21**
22	7481.8	0.000134	0.000067	0.50007	14962	1.9997	1.9971	3.9936	**22**
23	11223	0.000089	0.000045	0.50004	22443	1.9998	1.9980	3.9955	**23**
24	16834	0.000059	0.000030	0.50003	33666	1.9999	1.9986	3.9969	**24**
25	25251	0.000040	0.000020	0.50002	50500	1.9999	1.9990	3.9979	**25**
26	37877	0.000026	0.000013	0.50001	75752	1.9999	1.9993	3.9985	**26**
27	56815	0.000018	0.000009	0.50001	113628	2.0000	1.9995	3.9990	**27**
28	85223	0.000012	0.000006	0.50001	170443	2.0000	1.9997	3.9993	**28**
29	127834	0.000008	0.000004	0.50000	255666	2.0000	1.9998	3.9995	**29**
30	191751	0.000005	0.000003	0.50000	383500	2.0000	1.9998	3.9997	**30**
31	287627	0.000003	0.000002	0.50000	575251	2.0000	1.9999	3.9998	**31**
32	431440	0.000002	0.000001	0.50000	862878	2.0000	1.9999	3.9998	**32**
33	647160	0.000002	0.000001	0.50000	1294318	2.0000	1.9999	3.9999	**33**
34	970740	0.000001	0.000001	0.50000	1941477	2.0000	2.0000	3.9999	**34**
35	1456110	0.000001	0.000000	0.50000	2912217	2.0000	2.0000	3.9999	**35**