ATTACHMENTS

PU CiptaKarya's Clean Water Planning Guideline Table

No.	Description	City Categories by Number of Inhabitants		
		Moderate City 100.000-500.000 (Person)	Small Town 20.000-100.000 (Person)	Country 3.000-20.000 (Person)
1	Home Connection Unit Consumption (SR) lt/person/day	100-150	100-150	90-100
2	Percentage of Consumption of Non Domestic Units on Domestic Consumption	25-30	20-25	10-20
3	Percentage of Water Loss (%)	15-20	15-20	15-20
4	Maximum Daily Factors	1,1	1,1	1,1-1,25
5	Peak Hour Factor	1,5-2,0	1,5-2,0	1,5-2,0
6	Number of Souls SR	6	5	5
7	Number of Souls General Hydrant (HU)	100	100-200	100-200
8	Minimum Press Time at Critical Point of Distribution Network (Water Column Meter)	10	10	10
9	Reservoir Volume(%)	20-25	15-20	12-15
10	Operating Hours	24	24	24
11	SR / HU (%)	80-20	70-30	70-30

Source: JuknisSistemPenyediaan Air BersihKimpraswil (1998)

Technicals Economic Table

Compound Interest Factor

Compound interest factor

20%

n	Single payment		Uniform payment				Gradient
	Find F Given P (F/P, I, n)	Find P Given F (P/F, I, n)	Find F Given A (F/A, I, n)	Find A Given F (A/F, I, n)	Find P Given A (P/A, I, n)	Find A Given P (A/P, I, n)	Find A Given G (A/G, I, n)
1	1.200	0.8333	1.000	1.0000	0.8333	1.2000	0.0000
2	1.440	0.6944	2.200	0.4545	1.5278	0.6545	0.4545
3	1.728	0.5787	3.640	0.2747	2.1065	0.4747	0.8791
4	2.074	0.4823	5.368	0.1863	2.5887	0.3863	1.2742
5	2.488	0.4019	7.442	0.1344	2.9906	0.3344	1.6405
6	2.986	0.3349	9.930	0.1007	3.3255	0.3007	1.9788
7	3.583	0.2791	12.916	0.0774	3.6046	0.2774	2.2002
8	4.300	0.2326	16.499	0.0606	3.8372	0.2606	2.5756
9	5.160	0.1938	20.799	0.0481	4.0310	0.2481	2.8364
10	6.192	0.1615	25.959	0.0385	4.1925	0.2385	3.0739
11	7.430	0.1346	32.150	0.0311	4.3271	0.2311	3.2893
12	8.916	0.1122	39.581	0.0253	4.4392	0.2253	3.4841
13	10.699	0.0935	48.497	0.0206	4.5327	0.2206	3.6597
14	12.839	0.0779	59.196	0.0169	4.6106	0.2169	3.8175
15	15.407	0.0649	72.035	0.0139	4.6755	0.2139	3.9588
16	18.488	0.0541	87.442	0.0114	4.7296	0.2114	4.0851
17	22.186	0.0451	105.931	0.0094	4.7746	0.2094	4.1976
18	26.623	0.0376	128.117	0.0078	4.8122	0.2078	4.2975
19	31.948	0.0313	154.740	0.0065	4.8435	0.2065	4.3861
20	38.338	0.0261	186.688	0.0054	4.8696	0.2054	4.4643
21	46.005	0.0217	225.026	0.0044	4.8913	0.2044	4.5334
22	55.206	0.0181	271.031	0.0037	4.9094	0.2037	4.5941
23	66.247	0.0151	326.237	0.0031	4.9245	0.2031	4.6475
24	79.497	0.0126	392.484	0.0025	4.9371	0.2025	4.6943
25	95.396	0.0105	471.981	0.0021	4.9476	0.2021	4.7352
26	114.475	0.0087	567.377	0.0018	4.9563	0.2018	4.7709
27	137.371	0.0073	681.853	0.0015	4.9636	0.2015	4.8020
28	164.845	0.0061	819.223	0.0012	4.9697	0.2012	4.8291
29	197.814	0.0051	984.068	0.0010	4.9747	0.2010	4.8527
30	237.376	0.0042	1,181.882	0.0008	4.9789	0.2008	4.8731
31	284.852	0.0035	1,419.258	0.0007	4.9824	0.2007	4.8908
32	341.822	0.0029	1,704.109	0.0006	4.9854	0.2006	4.9061
33	410.186	0.0024	2,045.931	0.0005	4.9878	0.2005	4.9194
34	492.224	0.0020	2,456.118	0.0004	4.9898	0.2004	4.9308
35	590.668	0.0017	2,948.341	0.0003	4.9915	0.2003	4.9406
36	708.802	0.0014	3,539.009	0.0003	4.9929	0.2003	4.9491
37	850.562	0.0012	4,247.811	0.0002	4.9941	0.2002	4.9564
38	1,020.675	0.0010	5,098.373	0.0002	4.9951	0.2002	4.9627
39	1,224.810	0.0008	6,119.048	0.0002	4.9959	0.2002	4.9681
40	1,469.772	0.0007	7,343.858	0.0001	4.9966	0.2001	4.9728
41	1,763.726	0.0006	8,813.629	0.0001	4.9972	0.2001	4.9767
42	2,116.471	0.0005	10,577.355	0.0001	4.9976	0.2001	4.9801
43	2,539.765	0.0004	12,693.826	0.0001	4.9980	0.2001	4.9831
44	3,047.718	0.0003	15,233.592	0.0001	4.9984	0.2001	4.9856
45	3,657.262	0.0003	18,281.310	0.0001	4.9986	0.2001	4.9877
50	9,100.438	0.0001	45,497.191	0.0000	4.9995	0.2000	4.9945
60	56,347.514	0.0000	281,732.572	0.0000	4.9999	0.2000	4.9989
70	348,888.957	0.0000	1,744,439.785	0.0000	5.0000	0.2000	4.9998
80	2,160,228.462	0.0000	10,801,137.310	0.0000	5.0000	0.2000	5.0000
90	13,375,565.249	0.0000	66,877,821.245	0.0000	5.0000	0.2000	5.0000
100	82,817,974.522	0.0000	414,089,867.610	0.0000	5.0000	0.2000	5.0000

Source: Buku Ajar Ekonomi Teknik Universitas Muhammadiyah Surakarta

Compound Interest factor 6%

n	Single payment		Uniform payment				Gradient
	Find F Given P (F/P, I, n)	Find P Given F (P/F, I, n)	Find F Given A (F/A, I, n)	Find A Given F (A/F, I, n)	Find P Given A (P/A, I, n)	Find A Given P (A/P, I, n)	Find A Given G (A/G, I, n)
1	1.060	0.9434	1.000	1.0000	0.9434	1.0600	0.0000
2	1.124	0.8900	2.060	0.4854	1.8334	0.5454	0.4854
3	1.191	0.8396	3.184	0.3141	2.6730	0.3741	0.9612
4	1.262	0.7921	4.375	0.2286	3.4651	0.2886	1.4272
5	1.338	0.7473	5.637	0.1774	4.2124	0.2374	1.8836
6	1.419	0.7050	6.975	0.1434	4.9173	0.2034	2.3304
7	1.504	0.6651	8.394	0.1191	5.5824	0.1791	2.7676
8	1.594	0.6274	9.897	0.1010	6.2098	0.1610	3.1952
9	1.689	0.5919	11.491	0.0870	6.8017	0.1470	3.6133
10	1.791	0.5584	13.181	0.0759	7.3601	0.1359	4.0220
11	1.898	0.5268	14.972	0.0668	7.8869	0.1268	4.4213
12	2.012	0.4970	16.870	0.0593	8.3838	0.1193	4.8113
13	2.133	0.4688	18.882	0.0530	8.8527	0.1130	5.1920
14	2.261	0.4423	21.015	0.0476	9.2950	0.1076	5.5635
15	2.397	0.4173	23.276	0.0430	9.7122	0.1030	5.9260
16	2.540	0.3936	25.673	0.0390	10.1059	0.0990	6.2794
17	2.693	0.3714	28.213	0.0354	10.4773	0.0954	6.6240
18	2.854	0.3503	30.906	0.0324	10.8276	0.0924	6.9597
19	3.026	0.3305	33.760	0.0296	11.1581	0.0896	7.2867
20	3.207	0.3118	36.786	0.0272	11.4699	0.0872	7.6051
21	3.400	0.2942	39.993	0.0250	11.7641	0.0850	7.9151
22	3.604	0.2775	43.392	0.0230	12.0416	0.0830	8.2166
23	3.820	0.2618	46.996	0.0213	12.3034	0.0813	8.5099
24	4.049	0.2470	50.816	0.0197	12.5504	0.0797	8.7951
25	4.292	0.2330	54.865	0.0182	12.7834	0.0782	9.0722
26	4.549	0.2198	59.156	0.0169	13.0032	0.0769	9.3414
27	4.822	0.2074	63.706	0.0157	13.2105	0.0757	9.6029
28	5.112	0.1956	68.528	0.0146	13.4062	0.0746	9.8568
29	5.418	0.1846	73.640	0.0136	13.5907	0.0736	10.1032
30	5.743	0.1741	79.058	0.0126	13.7648	0.0726	10.3422
31	6.088	0.1643	84.802	0.0118	13.9291	0.0718	10.5740
32	6.453	0.1550	90.890	0.0110	14.0840	0.0710	10.7988
33	6.841	0.1462	97.343	0.0103	14.2302	0.0703	11.0166
34	7.251	0.1379	104.184	0.0096	14.3681	0.0696	11.2276
35	7.686	0.1301	111.435	0.0090	14.4982	0.0690	11.4319
36	8.147	0.1227	119.121	0.0084	14.6210	0.0684	11.6298
37	8.636	0.1158	127.268	0.0079	14.7368	0.0679	11.8213
38	9.154	0.1092	135.904	0.0074	14.8460	0.0674	12.0065
39	9.704	0.1031	145.058	0.0069	14.9491	0.0669	12.1857
40	10.286	0.0972	154.762	0.0065	15.0463	0.0665	12.3590
41	10.903	0.0917	165.048	0.0061	15.1380	0.0661	12.5264
42	11.557	0.0865	175.951	0.0057	15.2245	0.0657	12.6883
43	12.250	0.0816	187.508	0.0053	15.3062	0.0653	12.8446
44	12.985	0.0770	199.758	0.0050	15.3832	0.0650	12.9956
45	13.765	0.0727	212.744	0.0047	15.4558	0.0647	13.1413
50	18.420	0.0543	290.336	0.0034	15.7619	0.0634	13.7964
60	32.988	0.0303	533.128	0.0019	16.1614	0.0619	14.7909
70	59.076	0.0169	967.932	0.0010	16.3845	0.0610	15.4613
80	105.796	0.0095	1,746.600	0.0006	16.5091	0.0606	15.9033
90	189.465	0.0053	3,141.075	0.0003	16.5787	0.0603	16.1891
100	339.302	0.0029	5,638.368	0.0002	16.6175	0.0602	16.3711

Source: Buku Ajar Ekonomi Teknik Universitas Muhammadiyah Surakarta

Compound interest factor

9%

n	Single payment: Find F Given P (F/P, i, n)	Single payment: Find P Given F (P/F, i, n)	Uniform payment: Find F Given A (F/A, i, n)	Uniform payment: Find A Given F (A/F, i, n)	Uniform payment: Find P Given A (P/A, i, n)	Uniform payment: Find A Given P (A/P, i, n)	Gradient: Find A Given G (A/G, i, n)
1	1.090	0.9174	1.000	1.0000	0.9174	1.0900	0.0000
2	1.188	0.8417	2.090	0.4785	1.7591	0.5685	0.4785
3	1.295	0.7722	3.278	0.3051	2.5313	0.3951	0.9426
4	1.412	0.7084	4.573	0.2187	3.2397	0.3087	1.3925
5	1.539	0.6499	5.985	0.1671	3.8897	0.2571	1.8282
6	1.677	0.5963	7.523	0.1329	4.4859	0.2229	2.2498
7	1.828	0.5470	9.200	0.1087	5.0330	0.1987	2.6574
8	1.993	0.5019	11.028	0.0907	5.5348	0.1807	3.0512
9	2.172	0.4604	13.021	0.0768	5.9952	0.1668	3.4312
10	2.367	0.4224	15.193	0.0658	6.4177	0.1558	3.7978
11	2.580	0.3875	17.560	0.0569	6.8052	0.1469	4.1510
12	2.813	0.3555	20.141	0.0497	7.1607	0.1397	4.4910
13	3.066	0.3262	22.953	0.0436	7.4869	0.1336	4.8182
14	3.342	0.2992	26.019	0.0384	7.7862	0.1284	5.1326
15	3.642	0.2745	29.361	0.0341	8.0607	0.1241	5.4346
16	3.970	0.2519	33.003	0.0303	8.3126	0.1203	5.7245
17	4.328	0.2311	36.974	0.0270	8.5436	0.1170	6.0024
18	4.717	0.2120	41.301	0.0242	8.7556	0.1142	6.2687
19	5.142	0.1945	46.018	0.0217	8.9501	0.1117	6.5236
20	5.604	0.1784	51.160	0.0195	9.1285	0.1095	6.7674
21	6.109	0.1637	56.765	0.0176	9.2922	0.1076	7.0006
22	6.659	0.1502	62.873	0.0159	9.4424	0.1059	7.2232
23	7.258	0.1378	69.532	0.0144	9.5802	0.1044	7.4357
24	7.911	0.1264	76.790	0.0130	9.7066	0.1030	7.6384
25	8.623	0.1160	84.701	0.0118	9.8226	0.1018	7.8316
26	9.399	0.1064	93.324	0.0107	9.9290	0.1007	8.0156
27	10.245	0.0976	102.723	0.0097	10.0266	0.0997	8.1906
28	11.167	0.0895	112.968	0.0089	10.1161	0.0989	8.3571
29	12.172	0.0822	124.135	0.0081	10.1983	0.0981	8.5154
30	13.268	0.0754	136.308	0.0073	10.2737	0.0973	8.6657
31	14.462	0.0691	149.575	0.0067	10.3428	0.0967	8.8083
32	15.763	0.0634	164.037	0.0061	10.4062	0.0961	8.9436
33	17.182	0.0582	179.800	0.0056	10.4644	0.0956	9.0718
34	18.728	0.0534	196.982	0.0051	10.5178	0.0951	9.1933
35	20.414	0.0490	215.711	0.0046	10.5668	0.0946	9.3083
36	22.251	0.0449	236.125	0.0042	10.6118	0.0942	9.4171
37	24.254	0.0412	258.376	0.0039	10.6530	0.0939	9.5200
38	26.437	0.0378	282.630	0.0035	10.6908	0.0935	9.6172
39	28.816	0.0347	309.066	0.0032	10.7255	0.0932	9.7090
40	31.409	0.0318	337.882	0.0030	10.7574	0.0930	9.7957
41	34.236	0.0292	369.292	0.0027	10.7866	0.0927	9.8775
42	37.318	0.0268	403.528	0.0025	10.8134	0.0925	9.9546
43	40.676	0.0246	440.846	0.0023	10.8380	0.0923	10.0273
44	44.337	0.0226	481.522	0.0021	10.8605	0.0921	10.0958
45	48.327	0.0207	525.859	0.0019	10.8812	0.0919	10.1603
50	74.358	0.0134	815.084	0.0012	10.9617	0.0912	10.4295
60	176.031	0.0057	1,944.792	0.0005	11.0480	0.0905	10.7683
70	416.730	0.0024	4,619.223	0.0002	11.0844	0.0902	10.9427
80	986.552	0.0010	10,950.574	0.0001	11.0998	0.0901	11.0299
90	2,335.527	0.0004	25,939.184	0.0000	11.1054	0.0900	11.0726
100	5,529.041	0.0002	61,422.675	0.0000	11.1091	0.0900	11.0930

Source: Buku Ajar Ekonomi Teknik Universitas Muhammadiyah Surakarta

Compound interest factor

11%

n	Single payment: Find F Given P (F/P, I, n)	Single payment: Find P Given F (P/F, I, n)	Uniform payment: Find F Given A (F/A, I, n)	Uniform payment: Find A Given F (A/F, I, n)	Uniform payment: Find P Given A (P/A, I, n)	Uniform payment: Find A Given P (A/P, I, n)	Gradient: Find A Given G (A/G, I, n)
1	1.110	0.9009	1.000	1.0000	0.9009	1.1100	0.0000
2	1.232	0.8116	2.110	0.4739	1.7125	0.5839	0.4739
3	1.368	0.7312	3.342	0.2992	2.4437	0.4092	0.9306
4	1.518	0.6587	4.710	0.2123	3.1024	0.3223	1.3700
5	1.685	0.5935	6.228	0.1606	3.6959	0.2706	1.7923
6	1.870	0.5346	7.913	0.1264	4.2305	0.2364	2.1976
7	2.076	0.4817	9.783	0.1022	4.7122	0.2122	2.5863
8	2.305	0.4339	11.859	0.0843	5.1461	0.1943	2.9585
9	2.558	0.3909	14.164	0.0706	5.5370	0.1806	3.3144
10	2.839	0.3522	16.722	0.0598	5.8892	0.1698	3.6544
11	3.152	0.3173	19.561	0.0511	6.2065	0.1611	3.9788
12	3.498	0.2858	22.713	0.0440	6.4924	0.1540	4.2879
13	3.883	0.2575	26.212	0.0382	6.7499	0.1482	4.5822
14	4.310	0.2320	30.095	0.0332	6.9819	0.1432	4.8619
15	4.785	0.2090	34.405	0.0291	7.1909	0.1391	5.1275
16	5.311	0.1883	39.190	0.0255	7.3792	0.1355	5.3794
17	5.895	0.1696	44.501	0.0225	7.5488	0.1325	5.6180
18	6.544	0.1528	50.396	0.0198	7.7016	0.1298	5.8439
19	7.263	0.1377	56.939	0.0176	7.8393	0.1276	6.0574
20	8.062	0.1240	64.203	0.0156	7.9633	0.1256	6.2590
21	8.949	0.1117	72.265	0.0138	8.0751	0.1238	6.4491
22	9.934	0.1007	81.214	0.0123	8.1757	0.1223	6.6283
23	11.026	0.0907	91.148	0.0110	8.2664	0.1210	6.7969
24	12.239	0.0817	102.174	0.0098	8.3481	0.1198	6.9555
25	13.585	0.0736	114.413	0.0087	8.4217	0.1187	7.1045
26	15.080	0.0663	127.999	0.0078	8.4881	0.1178	7.2443
27	16.739	0.0597	143.079	0.0070	8.5478	0.1170	7.3754
28	18.580	0.0538	159.817	0.0063	8.6016	0.1163	7.4982
29	20.624	0.0485	178.397	0.0056	8.6501	0.1156	7.6131
30	22.892	0.0437	199.021	0.0050	8.6938	0.1150	7.7206
31	25.410	0.0394	221.913	0.0045	8.7331	0.1145	7.8210
32	28.206	0.0355	247.324	0.0040	8.7686	0.1140	7.9147
33	31.308	0.0319	275.529	0.0036	8.8005	0.1136	8.0021
34	34.752	0.0288	306.837	0.0033	8.8293	0.1133	8.0836
35	38.575	0.0259	341.590	0.0029	8.8552	0.1129	8.1594
36	42.818	0.0234	380.164	0.0026	8.8786	0.1126	8.2300
37	47.528	0.0210	422.982	0.0024	8.8996	0.1124	8.2957
38	52.756	0.0190	470.511	0.0021	8.9186	0.1121	8.3567
39	58.559	0.0171	523.267	0.0019	8.9357	0.1119	8.4133
40	65.001	0.0154	581.826	0.0017	8.9511	0.1117	8.4659
41	72.151	0.0139	646.827	0.0015	8.9649	0.1115	8.5147
42	80.088	0.0125	718.978	0.0014	8.9774	0.1114	8.5599
43	88.897	0.0112	799.065	0.0013	8.9886	0.1113	8.6017
44	98.676	0.0101	887.963	0.0011	8.9988	0.1111	8.6404
45	109.530	0.0091	986.639	0.0010	9.0079	0.1110	8.6763
50	184.565	0.0054	1,668.771	0.0006	9.0417	0.1106	8.8185
60	524.057	0.0019	4,755.066	0.0002	9.0736	0.1102	8.9762
70	1,488.019	0.0007	13,518.356	0.0001	9.0848	0.1101	9.0438
80	4,225.113	0.0002	38,401.025	0.0000	9.0888	0.1100	9.0720
90	11,996.874	0.0001	109,053.398	0.0000	9.0902	0.1100	9.0834
100	34,064.175	0.0000	309,665.230	0.0000	9.0906	0.1100	9.0880

Source: Buku Ajar Ekonomi Teknik Universitas Muhammadiyah Surakarta

Compound Interest factor

12%

n	Single payment		Uniform payment				Gradient
	Find F *Given P* (F/P, I, n)	*Find P* *Given F* (P/F, I, n)	*Find F* *Given A* (F/A, I, n)	*Find A* *Given F* (A/F, I, n)	*Find P* *Given A* (P/A, I, n)	*Find A* *Given P* (A/P, I, n)	*Find A* *Given G* (A/G, I, n)
1	1.120	0.8929	1.000	1.0000	0.8929	1.1200	0.0000
2	1.254	0.7972	2.120	0.4717	1.6901	0.5917	0.4717
3	1.405	0.7118	3.374	0.2963	2.4018	0.4163	0.9246
4	1.574	0.6355	4.779	0.2092	3.0373	0.3292	1.3589
5	1.762	0.5674	6.353	0.1574	3.6048	0.2774	1.7746
6	1.974	0.5066	8.115	0.1232	4.1114	0.2432	2.1720
7	2.211	0.4523	10.089	0.0991	4.5638	0.2191	2.5515
8	2.476	0.4039	12.300	0.0813	4.9676	0.2013	2.9131
9	2.773	0.3606	14.776	0.0677	5.3282	0.1877	3.2574
10	3.106	0.3220	17.549	0.0570	5.6502	0.1770	3.5847
11	3.479	0.2875	20.655	0.0484	5.9377	0.1684	3.8953
12	3.896	0.2567	24.133	0.0414	6.1944	0.1614	4.1897
13	4.363	0.2292	28.029	0.0357	6.4235	0.1557	4.4683
14	4.887	0.2046	32.393	0.0309	6.6282	0.1509	4.7317
15	5.474	0.1827	37.280	0.0268	6.8109	0.1468	4.9803
16	6.130	0.1631	42.753	0.0234	6.9740	0.1434	5.2147
17	6.866	0.1456	48.884	0.0205	7.1196	0.1405	5.4353
18	7.690	0.1300	55.750	0.0179	7.2497	0.1379	5.6427
19	8.613	0.1161	63.440	0.0158	7.3658	0.1358	5.8375
20	9.646	0.1037	72.052	0.0139	7.4694	0.1339	6.0202
21	10.804	0.0926	81.699	0.0122	7.5620	0.1322	6.1913
22	12.100	0.0826	92.503	0.0108	7.6446	0.1308	6.3514
23	13.552	0.0738	104.603	0.0096	7.7184	0.1296	6.5010
24	15.179	0.0659	118.155	0.0085	7.7843	0.1285	6.6406
25	17.000	0.0588	133.334	0.0075	7.8431	0.1275	6.7708
26	19.040	0.0525	150.334	0.0067	7.8957	0.1267	6.8921
27	21.325	0.0469	169.374	0.0059	7.9426	0.1259	7.0049
28	23.884	0.0419	190.699	0.0052	7.9844	0.1252	7.1008
29	26.750	0.0374	214.583	0.0047	8.0218	0.1247	7.2071
30	29.960	0.0334	241.333	0.0041	8.0552	0.1241	7.2974
31	33.555	0.0298	271.293	0.0037	8.0850	0.1237	7.3811
32	37.582	0.0266	304.848	0.0033	8.1116	0.1233	7.4586
33	42.092	0.0238	342.429	0.0029	8.1354	0.1229	7.5302
34	47.143	0.0212	384.521	0.0026	8.1566	0.1226	7.5965
35	52.800	0.0189	431.663	0.0023	8.1755	0.1223	7.6577
36	59.136	0.0169	484.463	0.0021	8.1924	0.1221	7.7141
37	66.232	0.0151	543.599	0.0018	8.2075	0.1218	7.7661
38	74.180	0.0135	609.831	0.0016	8.2210	0.1216	7.8141
39	83.081	0.0120	684.010	0.0015	8.2330	0.1215	7.8582
40	93.051	0.0107	767.091	0.0013	8.2438	0.1213	7.8988
41	104.217	0.0096	860.142	0.0012	8.2534	0.1212	7.9361
42	116.723	0.0086	964.359	0.0010	8.2619	0.1210	7.9704
43	130.730	0.0076	1,081.083	0.0009	8.2696	0.1209	8.0019
44	146.418	0.0068	1,211.813	0.0008	8.2764	0.1208	8.0308
45	163.988	0.0061	1,358.230	0.0007	8.2825	0.1207	8.0572
50	280.002	0.0035	2,400.018	0.0004	8.3045	0.1204	8.1597
60	897.597	0.0011	7,471.641	0.0001	8.3240	0.1201	8.2664
70	2,787.800	0.0004	23,223.332	0.0000	8.3303	0.1200	8.3082
80	0,658.483	0.0001	72,145.693	0.0000	8.3324	0.1200	8.3241
90	26,891.934	0.0000	224,091.119	0.0000	8.3330	0.1200	8.3300
100	83,522.266	0.0000	696,010.548	0.0000	8.3332	0.1200	8.3321

Source: Buku Ajar Ekonomi Teknik Universitas Muhammadiyah Surakarta

Compound interest factor

14%

n	Single payment		Uniform payment				Gradient
	Find F Given P (F/P, I, n)	Find P Given F (P/F, I, n)	Find F Given A (F/A, I, n)	Find A Given F (A/F, I, n)	Find P Given A (P/A, I, n)	Find A Given P (A/P, I, n)	Find A Given G (A/G, I, n)
1	1.140	0.8772	1.000	1.0000	0.8772	1.1400	0.0000
2	1.300	0.7695	2.140	0.4673	1.6467	0.6073	0.4673
3	1.482	0.6750	3.440	0.2907	2.3216	0.4307	0.9129
4	1.689	0.5921	4.921	0.2032	2.9137	0.3432	1.3370
5	1.925	0.5194	6.610	0.1513	3.4331	0.2913	1.7399
6	2.195	0.4556	8.536	0.1172	3.8887	0.2572	2.1218
7	2.502	0.3996	10.730	0.0932	4.2883	0.2332	2.4832
8	2.853	0.3506	13.233	0.0756	4.6389	0.2156	2.8246
9	3.252	0.3075	16.085	0.0622	4.9464	0.2022	3.1463
10	3.707	0.2697	19.337	0.0517	5.2161	0.1917	3.4490
11	4.226	0.2366	23.045	0.0434	5.4527	0.1834	3.7333
12	4.818	0.2076	27.271	0.0367	5.6603	0.1767	3.9998
13	5.492	0.1821	32.089	0.0312	5.8424	0.1712	4.2491
14	6.261	0.1597	37.581	0.0266	6.0021	0.1666	4.4819
15	7.138	0.1401	43.842	0.0228	6.1422	0.1628	4.6990
16	8.137	0.1229	50.980	0.0196	6.2651	0.1596	4.9011
17	9.276	0.1078	59.118	0.0169	6.3729	0.1569	5.0888
18	10.575	0.0946	68.394	0.0146	6.4674	0.1546	5.2630
19	12.056	0.0829	78.969	0.0127	6.5504	0.1527	5.4243
20	13.743	0.0728	91.025	0.0110	6.6231	0.1510	5.5734
21	15.668	0.0638	104.768	0.0095	6.6870	0.1495	5.7111
22	17.861	0.0560	120.436	0.0083	6.7429	0.1483	5.8381
23	20.362	0.0491	138.297	0.0072	6.7921	0.1472	5.9549
24	23.212	0.0431	158.659	0.0063	6.8351	0.1463	6.0624
25	26.462	0.0378	181.871	0.0055	6.8729	0.1455	6.1610
26	30.167	0.0331	208.333	0.0048	6.9061	0.1448	6.2514
27	34.390	0.0291	238.499	0.0042	6.9352	0.1442	6.3342
28	39.204	0.0255	272.889	0.0037	6.9607	0.1437	6.4100
29	44.693	0.0224	312.094	0.0032	6.9830	0.1432	6.4791
30	50.950	0.0196	356.787	0.0028	7.0027	0.1428	6.5423
31	58.083	0.0172	407.737	0.0025	7.0199	0.1425	6.5998
32	66.215	0.0151	465.820	0.0021	7.0350	0.1421	6.6522
33	75.485	0.0132	532.035	0.0019	7.0482	0.1419	6.6999
34	86.053	0.0116	607.520	0.0016	7.0599	0.1416	6.7431
35	98.100	0.0102	693.573	0.0014	7.0700	0.1414	6.7824
36	111.834	0.0089	791.673	0.0013	7.0790	0.1413	6.8180
37	127.491	0.0078	903.507	0.0011	7.0868	0.1411	6.8503
38	145.340	0.0069	1,030.998	0.0010	7.0937	0.1410	6.8796
39	165.687	0.0060	1,176.338	0.0009	7.0997	0.1409	6.9060
40	188.884	0.0053	1,342.025	0.0007	7.1050	0.1407	6.9300
41	215.327	0.0046	1,530.909	0.0007	7.1097	0.1407	6.9516
42	245.473	0.0041	1,746.236	0.0006	7.1138	0.1406	6.9711
43	279.839	0.0036	1,991.709	0.0005	7.1173	0.1405	6.9889
44	319.017	0.0031	2,271.548	0.0004	7.1205	0.1404	7.0045
45	363.679	0.0027	2,590.565	0.0004	7.1232	0.1404	7.0188
50	700.233	0.0014	4,994.521	0.0002	7.1327	0.1402	7.0714
60	2,595.919	0.0004	18,535.133	0.0001	7.1401	0.1401	7.1197
70	9,623.645	0.0001	68,733.178	0.0000	7.1421	0.1400	7.1356
80	35,676.982	0.0000	254,828.441	0.0000	7.1427	0.1400	7.1406
90	132,262.467	0.0000	944,724.767	0.0000	7.1428	0.1400	7.1422
100	490,326.238	0.0000	3,502,323.129	0.0000	7.1428	0.1400	7.1427

Source: Buku Ajar Ekonomi Teknik Universitas Muhammadiyah Surakarta

Compound Interest factor

18%

n	Single payment		Uniform payment				Gradient
	Find F Given P (F/P, i, n)	Find P Given F (P/F, i, n)	Find F Given A (F/A, i, n)	Find A Given F (A/F, i, n)	Find P Given A (P/A, i, n)	Find A Given P (A/P, i, n)	Find A Given G (A/G, i, n)
1	1.180	0.8475	1.000	1.0000	0.8475	1.1800	0.0000
2	1.392	0.7182	2.180	0.4587	1.5656	0.6387	0.4587
3	1.643	0.6086	3.572	0.2799	2.1743	0.4599	0.8902
4	1.939	0.5158	5.215	0.1917	2.6901	0.3717	1.2947
5	2.288	0.4371	7.154	0.1398	3.1272	0.3198	1.6728
6	2.700	0.3704	9.442	0.1059	3.4976	0.2859	2.0252
7	3.185	0.3139	12.142	0.0824	3.8115	0.2624	2.3526
8	3.759	0.2660	15.327	0.0652	4.0776	0.2452	2.6558
9	4.435	0.2255	19.086	0.0524	4.3030	0.2324	2.9358
10	5.234	0.1911	23.521	0.0425	4.4941	0.2225	3.1936
11	6.176	0.1619	28.755	0.0348	4.6560	0.2148	3.4303
12	7.288	0.1372	34.931	0.0286	4.7932	0.2086	3.6470
13	8.599	0.1163	42.219	0.0237	4.9095	0.2037	3.8449
14	10.147	0.0985	50.818	0.0197	5.0081	0.1997	4.0250
15	11.974	0.0835	60.965	0.0164	5.0916	0.1964	4.1887
16	14.129	0.0708	72.939	0.0137	5.1624	0.1937	4.3369
17	16.672	0.0600	87.068	0.0115	5.2223	0.1915	4.4708
18	19.673	0.0508	103.740	0.0096	5.2732	0.1896	4.5916
19	23.214	0.0431	123.414	0.0081	5.3162	0.1881	4.7003
20	27.393	0.0365	146.628	0.0068	5.3527	0.1868	4.7978
21	32.324	0.0309	174.021	0.0057	5.3837	0.1857	4.8851
22	38.142	0.0262	206.345	0.0048	5.4099	0.1848	4.9632
23	45.008	0.0222	244.487	0.0041	5.4321	0.1841	5.0329
24	53.109	0.0188	289.494	0.0035	5.4509	0.1835	5.0950
25	62.669	0.0160	342.603	0.0029	5.4669	0.1829	5.1502
26	73.949	0.0135	405.272	0.0025	5.4804	0.1825	5.1991
27	87.260	0.0115	479.221	0.0021	5.4919	0.1821	5.2425
28	102.967	0.0097	566.481	0.0018	5.5016	0.1818	5.2810
29	121.501	0.0082	669.447	0.0015	5.5098	0.1815	5.3149
30	143.371	0.0070	790.948	0.0013	5.5168	0.1813	5.3448
31	169.177	0.0059	934.319	0.0011	5.5227	0.1811	5.3712
32	199.629	0.0050	1,103.496	0.0009	5.5277	0.1809	5.3945
33	235.563	0.0042	1,303.125	0.0008	5.5320	0.1808	5.4149
34	277.964	0.0036	1,538.688	0.0006	5.5356	0.1806	5.4328
35	327.997	0.0030	1,816.652	0.0006	5.5386	0.1806	5.4485
36	387.037	0.0026	2,144.649	0.0005	5.5412	0.1805	5.4623
37	456.703	0.0022	2,531.686	0.0004	5.5434	0.1804	5.4744
38	538.910	0.0019	2,988.389	0.0003	5.5452	0.1803	5.4849
39	635.914	0.0016	3,527.299	0.0003	5.5468	0.1803	5.4941
40	750.378	0.0013	4,163.213	0.0002	5.5482	0.1802	5.5022
41	885.446	0.0011	4,913.591	0.0002	5.5493	0.1802	5.5092
42	1,044.827	0.0010	5,799.038	0.0002	5.5502	0.1802	5.5153
43	1,232.896	0.0008	6,843.865	0.0001	5.5510	0.1801	5.5207
44	1,454.817	0.0007	8,076.760	0.0001	5.5517	0.1801	5.5253
45	1,716.684	0.0006	9,531.577	0.0001	5.5523	0.1801	5.5293
50	3,927.357	0.0003	21,813.094	0.0000	5.5541	0.1800	5.5428
60	20,555.140	0.0000	114,189.666	0.0000	5.5553	0.1800	5.5526
70	107,582.222	0.0000	597,673.458	0.0000	5.5555	0.1800	5.5549
80	563,067.660	0.0000	3,128,148.113	0.0000	5.5555	0.1800	5.5554
90	2,947,003.540	0.0000	16,372,236.334	0.0000	5.5556	0.1800	5.5555
100	15,424,131.905	0.0000	85,689,616.141	0.0000	5.5556	0.1800	5.5555

Source: Buku Ajar Ekonomi Teknik Universitas Muhammadiyah Surakarta

Compound interest factor

20%

n	Single payment		Uniform payment				Gradient
	Find F Given P (F/P, I, n)	Find P Given F (P/F, I, n)	Find F Given A (F/A, I, n)	Find A Given F (A/F, I, n)	Find P Given A (P/A, I, n)	Find A Given P (A/P, I, n)	Find A Given G (A/G, I, n)
1	1.200	0.8333	1.000	1.0000	0.8333	1.2000	0.0000
2	1.440	0.6944	2.200	0.4545	1.5278	0.6545	0.4545
3	1.728	0.5787	3.640	0.2747	2.1065	0.4747	0.8791
4	2.074	0.4823	5.368	0.1863	2.5887	0.3863	1.2742
5	2.488	0.4019	7.442	0.1344	2.9906	0.3344	1.6405
6	2.986	0.3349	9.930	0.1007	3.3255	0.3007	1.9780
7	3.583	0.2791	12.916	0.0774	3.6046	0.2774	2.2902
8	4.300	0.2326	16.499	0.0606	3.8372	0.2606	2.5756
9	5.160	0.1938	20.799	0.0481	4.0310	0.2481	2.8364
10	6.192	0.1615	25.959	0.0385	4.1925	0.2385	3.0739
11	7.430	0.1346	32.150	0.0311	4.3271	0.2311	3.2893
12	8.916	0.1122	39.581	0.0253	4.4392	0.2253	3.4841
13	10.699	0.0935	48.497	0.0206	4.5327	0.2206	3.6597
14	12.839	0.0779	59.196	0.0169	4.6106	0.2169	3.8175
15	15.407	0.0649	72.035	0.0139	4.6755	0.2139	3.9588
16	18.488	0.0541	87.442	0.0114	4.7296	0.2114	4.0851
17	22.186	0.0451	105.931	0.0094	4.7746	0.2094	4.1976
18	26.623	0.0376	128.117	0.0078	4.8122	0.2078	4.2975
19	31.948	0.0313	154.740	0.0065	4.8435	0.2065	4.3861
20	38.338	0.0261	186.688	0.0054	4.8696	0.2054	4.4643
21	46.005	0.0217	225.026	0.0044	4.8913	0.2044	4.5334
22	55.206	0.0181	271.031	0.0037	4.9094	0.2037	4.5941
23	66.247	0.0151	326.237	0.0031	4.9245	0.2031	4.6475
24	79.497	0.0126	392.484	0.0025	4.9371	0.2025	4.6943
25	95.396	0.0105	471.981	0.0021	4.9476	0.2021	4.7352
26	114.475	0.0087	567.377	0.0018	4.9563	0.2018	4.7709
27	137.371	0.0073	681.853	0.0015	4.9636	0.2015	4.8020
28	164.845	0.0061	819.223	0.0012	4.9697	0.2012	4.8291
29	197.814	0.0051	984.068	0.0010	4.9747	0.2010	4.8527
30	237.376	0.0042	1,181.882	0.0008	4.9789	0.2008	4.8731
31	284.852	0.0035	1,419.258	0.0007	4.9824	0.2007	4.8908
32	341.822	0.0029	1,704.109	0.0006	4.9854	0.2006	4.9061
33	410.186	0.0024	2,045.931	0.0005	4.9878	0.2005	4.9194
34	492.224	0.0020	2,456.118	0.0004	4.9898	0.2004	4.9308
35	590.668	0.0017	2,948.341	0.0003	4.9915	0.2003	4.9406
36	708.802	0.0014	3,539.009	0.0003	4.9929	0.2003	4.9491
37	850.562	0.0012	4,247.811	0.0002	4.9941	0.2002	4.9564
38	1,020.675	0.0010	5,098.373	0.0002	4.9951	0.2002	4.9627
39	1,224.810	0.0008	6,119.048	0.0002	4.9959	0.2002	4.9681
40	1,469.772	0.0007	7,343.858	0.0001	4.9966	0.2001	4.9728
41	1,763.726	0.0006	8,813.629	0.0001	4.9972	0.2001	4.9767
42	2,116.471	0.0005	10,577.355	0.0001	4.9976	0.2001	4.9801
43	2,539.765	0.0004	12,693.826	0.0001	4.9980	0.2001	4.9831
44	3,047.718	0.0003	15,233.592	0.0001	4.9984	0.2001	4.9856
45	3,657.262	0.0003	18,281.310	0.0001	4.9986	0.2001	4.9877
50	9,100.438	0.0001	45,497.191	0.0000	4.9995	0.2000	4.9945
60	56,347.514	0.0000	281,732.572	0.0000	4.9999	0.2000	4.9989
70	348,888.957	0.0000	1,744,439.785	0.0000	5.0000	0.2000	4.9998
80	2,160,228.462	0.0000	10,801,137.310	0.0000	5.0000	0.2000	5.0000
90	13,375,565.249	0.0000	66,877,821.245	0.0000	5.0000	0.2000	5.0000
100	82,817,974.522	0.0000	414,089,867.610	0.0000	5.0000	0.2000	5.0000

Source: Buku Ajar Ekonomi Teknik Universitas Muhammadiyah Surakarta