FUTURE VALUE of a ***LUMP SUM*** (LS_{fv}): future worth of a Present Value (LS_{pv}) *compounded* at interest rate (r) over some time period (n)

$LS_{fv} = LS_{pv}(1+r)^n$ or in computer language $=LS_{pv}*(1+B5)^{A6}$ (for 1% and 1 period)

n	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	n
1	1.0100	1.0200	1.0300	1.0400	1.0500	1.0600	1.0700	1.0800	1.0900	1.1000	1.1100	1.1200	1.1300	1.1400	1.1500	1.1600	1.1700	1.1800	1
2	1.0201	1.0404	1.0609	1.0816	1.1025	1.1236	1.1449	1.1664	1.1881	1.2100	1.2321	1.2544	1.2769	1.2996	1.3225	1.3456	1.3689	1.3924	2
3	1.0303	1.0612	1.0927	1.1249	1.1576	1.1910	1.2250	1.2597	1.2950	1.3310	1.3676	1.4049	1.4429	1.4815	1.5209	1.5609	1.6016	1.6430	3
4	1.0406	1.0824	1.1255	1.1699	1.2155	1.2625	1.3108	1.3605	1.4116	1.4641	1.5181	1.5735	1.6305	1.6890	1.7490	1.8106	1.8739	1.9388	4
5	1.0510	1.1041	1.1593	1.2167	1.2763	1.3382	1.4026	1.4693	1.5386	1.6105	1.6851	1.7623	1.8424	1.9254	2.0114	2.1003	2.1924	2.2878	5
6	1.0615	1.1262	1.1941	1.2653	1.3401	1.4185	1.5007	1.5869	1.6771	1.7716	1.8704	1.9738	2.0820	2.1950	2.3131	2.4364	2.5652	2.6996	6
7	1.0721	1.1487	1.2299	1.3159	1.4071	1.5036	1.6058	1.7138	1.8280	1.9487	2.0762	2.2107	2.3526	2.5023	2.6600	2.8262	3.0012	3.1855	7
8	1.0829	1.1717	1.2668	1.3686	1.4775	1.5938	1.7182	1.8509	1.9926	2.1436	2.3045	2.4760	2.6584	2.8526	3.0590	3.2784	3.5115	3.7589	8
9	1.0937	1.1951	1.3048	1.4233	1.5513	1.6895	1.8385	1.9990	2.1719	2.3579	2.5580	2.7731	3.0040	3.2519	3.5179	3.8030	4.1084	4.4355	9
10	1.1046	1.2190	1.3439	1.4802	1.6289	1.7908	1.9672	2.1589	2.3674	2.5937	2.8394	3.1058	3.3946	3.7072	4.0456	4.4114	4.8068	5.2338	10
11	1.1157	1.2434	1.3842	1.5395	1.7103	1.8983	2.1049	2.3316	2.5804	2.8531	3.1518	3.4785	3.8359	4.2262	4.6524	5.1173	5.6240	6.1759	11
12	1.1268	1.2682	1.4258	1.6010	1.7959	2.0122	2.2522	2.5182	2.8127	3.1384	3.4985	3.8960	4.3345	4.8179	5.3503	5.9360	6.5801	7.2876	12
14	1.1495	1.3195	1.5126	1.7317	1.9799	2.2609	2.5785	2.9372	3.3417	3.7975	4.3104	4.8871	5.5348	6.2613	7.0757	7.9875	9.0075	10.1472	14
16	1.1726	1.3728	1.6047	1.8730	2.1829	2.5404	2.9522	3.4259	3.9703	4.5950	5.3109	6.1304	7.0673	8.1372	9.3576	10.7480	12.3303	14.1290	16
18	1.1961	1.4282	1.7024	2.0258	2.4066	2.8543	3.3799	3.9960	4.7171	5.5599	6.5436	7.6900	9.0243	10.5752	12.3755	14.4625	16.8790	19.6733	18
20	1.2202	1.4859	1.8061	2.1911	2.6533	3.2071	3.8697	4.6610	5.6044	6.7275	8.0623	9.6463	11.5231	13.7435	16.3665	19.4608	23.1056	27.3930	20
22	1.2447	1.5460	1.9161	2.3699	2.9253	3.6035	4.4304	5.4365	6.6586	8.1403	9.9336	12.1003	14.7138	17.8610	21.6447	26.1864	31.6293	38.1421	22
24	1.2697	1.6084	2.0328	2.5633	3.2251	4.0489	5.0724	6.3412	7.9111	9.8497	12.2392	15.1786	18.7881	23.2122	28.6252	35.2364	43.2973	53.1090	24
30	1.3478	1.8114	2.4273	3.2434	4.3219	5.7435	7.6123	10.0627	13.2677	17.4494	22.8923	29.9599	39.1159	50.9502	66.2118	85.8499	111.0647	143.3706	30
36	1.43	2.04	2.90	4.10	5.79	8.15	11.42	15.97	22.25	30.91	42.82	59.14	81.44	111.83	153.15	209.16	284.90	387.04	36
42	1.52	2.30	3.46	5.19	7.76	11.56	17.14	25.34	37.32	54.76	80.09	116.72	169.55	245.47	354.25	509.61	730.81	1044.83	42
48	1.61	2.59	4.13	6.57	10.40	16.39	25.73	40.21	62.59	97.02	149.80	230.39	352.99	538.81	819.40	1241.61	1874.66	2820.57	48
54	1.71	2.91	4.93	8.31	13.94	23.26	38.61	63.81	104.96	171.87	280.18	454.75	734.91	1182.67	1895.32	3025.04	4808.80	7614.27	54
60	1.82	3.28	5.89	10.52	18.68	32.99	57.95	101.26	176.03	304.48	524.06	897.60	1530.05	2595.92	4384.00	7370.20	12335.36	20555.14	60
72	2.05	4.16	8.40	16.84	33.55	66.38	130.51	254.98	495.12	955.59	1833.39	3497.02	6632.05	12506.89	23455.49	43749.71	81167.48	149797.49	72

n	19%	20%	21%	22%	23%	24%	25%	26%	27%	28%	29%	30%	31%	32%	33%	34%	35%	36%	n
1	1.1900	1.2000	1.210	1.220	1.230	1.240	1.250	1.260	1.270	1.280	1.290	1.300	1.310	1.320	1.330	1.340	1.350	1.360	1
2	1.4161	1.4400	1.464	1.488	1.513	1.538	1.563	1.588	1.613	1.638	1.664	1.690	1.716	1.742	1.769	1.796	1.823	1.850	2
3	1.6852	1.7280	1.772	1.816	1.861	1.907	1.953	2.000	2.048	2.097	2.147	2.197	2.248	2.300	2.353	2.406	2.460	2.515	3
4	2.0053	2.0736	2.144	2.215	2.289	2.364	2.441	2.520	2.601	2.684	2.769	2.856	2.945	3.036	3.129	3.224	3.322	3.421	4
5	2.3864	2.4883	2.594	2.703	2.815	2.932	3.052	3.176	3.304	3.436	3.572	3.713	3.858	4.007	4.162	4.320	4.484	4.653	5
6	2.8398	2.9860	3.138	3.297	3.463	3.635	3.815	4.002	4.196	4.398	4.608	4.827	5.054	5.290	5.535	5.789	6.053	6.328	6
7	3.3793	3.5832	3.797	4.023	4.259	4.508	4.768	5.042	5.329	5.629	5.945	6.275	6.621	6.983	7.361	7.758	8.172	8.605	7
8	4.0214	4.2998	4.595	4.908	5.239	5.590	5.960	6.353	6.768	7.206	7.669	8.157	8.673	9.217	9.791	10.395	11.032	11.703	8
9	4.7854	5.1598	5.560	5.987	6.444	6.931	7.451	8.005	8.595	9.223	9.893	10.604	11.362	12.166	13.022	13.930	14.894	15.917	9
10	5.6947	6.1917	6.727	7.305	7.926	8.594	9.313	10.086	10.915	11.806	12.761	13.786	14.884	16.060	17.319	18.666	20.107	21.647	10
11	6.7767	7.4301	8.140	8.912	9.749	10.657	11.642	12.708	13.862	15.112	16.462	17.922	19.498	21.199	23.034	25.012	27.144	29.439	11
12	8.0642	8.9161	9.850	10.872	11.991	13.215	14.552	16.012	17.605	19.343	21.236	23.298	25.542	27.983	30.635	33.516	36.644	40.037	12
14	11.4198	12.8392	14.421	16.182	18.141	20.319	22.737	25.421	28.396	31.691	35.339	39.374	43.833	48.757	54.190	60.182	66.784	74.053	14
16	16.1715	18.4884	21.114	24.086	27.446	31.243	35.527	40.358	45.799	51.923	58.808	66.542	75.221	84.954	95.858	108.063	121.714	136.969	16
18	22.9005	26.6233	30.913	35.849	41.523	48.039	55.511	64.072	73.870	85.071	97.862	112.455	129.087	148.024	169.562	194.038	221.824	253.338	18
20	32.4294	38.3376	45.259	53.358	62.821	73.864	86.736	101.721	119.145	139.380	162.852	190.050	221.527	257.916	299.939	348.414	404.274	468.574	20
22	45.9233	55.2061	66.264	79.418	95.041	113.574	135.525	161.492	192.168	228.360	271.003	321.184	380.162	449.393	530.562	625.613	736.789	866.674	22
24	65.0320	79.4968	97.017	118.205	143.788	174.631	211.758	256.385	309.948	374.144	450.976	542.801	652.396	783.023	938.511	1123.350	1342.797	1603.001	24
30	184.6753	237.3763	304.482	389.758	497.913	634.820	807.794	1025.927	1300.504	1645.505	2078.219	2619.996	3297.151	4142.075	5194.566	6503.452	8128.550	10143.019	30
36	524.43	708.80	956	1285	1724	2308	3081	4105	5457	7237	9577	12646	16664	21911	28751	37651	49206	64180	36
42	1489.27	2116.47	2999	4238	5971	8389	11755	16427	22896	31829	44133	61041	84216	115906	159136	217972	297864	406101	42
48	4229.16	6319.75	9412	13972	20675	30496	44842	65733	96068	139984	203379	294633	425620	613125	880803	1261916	1803104	2569612	48
54	12009.80	18870.67	29540	46071	71594	110859	171057	263033	403089	615656	937226	1422136	2151047	3243339	4875157	7305654	10914994	16259270	54
60	34104.97	56347.51	92709	151911	247917	402996	652530	1052526	1691310	2707685	4318994	6864377	10871206	17156784	26983511	42294890	66073317	102880840	60
72	275030.73	502400.10	913160	1651611	2972816	5325512	9495568	16853079	29776106	52374250	91718964	159926844	277672766	480090428	826643299	1417573162	2421203715	4119091152	72

PRESENT VALUE of a ***LUMP SUM*** (LS_{pv}): current worth of a Future Value (LS_{fv}) *discounted* at interest rate (r) from some future time period (n)

$LS_{pv} = LS_{fv}/(1+r)^n$ or in spreadsheet format $=LS_{pv}/(1+B5)^{A6}$ (for 1% and 1 period)

n	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	n
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772	0.8696	0.8621	0.8547	0.8475	1
2	0.9803	0.9612	0.9426	0.9246	0.9070	0.8900	0.8734	0.8573	0.8417	0.8264	0.8116	0.7972	0.7831	0.7695	0.7561	0.7432	0.7305	0.7182	2
3	0.9706	0.9423	0.9151	0.8890	0.8638	0.8396	0.8163	0.7938	0.7722	0.7513	0.7312	0.7118	0.6931	0.6750	0.6575	0.6407	0.6244	0.6086	3
4	0.9610	0.9238	0.8885	0.8548	0.8227	0.7921	0.7629	0.7350	0.7084	0.6830	0.6587	0.6355	0.6133	0.5921	0.5718	0.5523	0.5337	0.5158	4
5	0.9515	0.9057	0.8626	0.8219	0.7835	0.7473	0.7130	0.6806	0.6499	0.6209	0.5935	0.5674	0.5428	0.5194	0.4972	0.4761	0.4561	0.4371	5
6	0.9420	0.8880	0.8375	0.7903	0.7462	0.7050	0.6663	0.6302	0.5963	0.5645	0.5346	0.5066	0.4803	0.4556	0.4323	0.4104	0.3898	0.3704	6
7	0.9327	0.8706	0.8131	0.7599	0.7107	0.6651	0.6227	0.5835	0.5470	0.5132	0.4817	0.4523	0.4251	0.3996	0.3759	0.3538	0.3332	0.3139	7
8	0.9235	0.8535	0.7894	0.7307	0.6768	0.6274	0.5820	0.5403	0.5019	0.4665	0.4339	0.4039	0.3762	0.3506	0.3269	0.3050	0.2848	0.2660	8
9	0.9143	0.8368	0.7664	0.7026	0.6446	0.5919	0.5439	0.5002	0.4604	0.4241	0.3909	0.3606	0.3329	0.3075	0.2843	0.2630	0.2434	0.2255	9
10	0.9053	0.8203	0.7441	0.6756	0.6139	0.5584	0.5083	0.4632	0.4224	0.3855	0.3522	0.3220	0.2946	0.2697	0.2472	0.2267	0.2080	0.1911	10
11	0.8963	0.8043	0.7224	0.6496	0.5847	0.5268	0.4751	0.4289	0.3875	0.3505	0.3173	0.2875	0.2607	0.2366	0.2149	0.1954	0.1778	0.1619	11
12	0.8874	0.7885	0.7014	0.6246	0.5568	0.4970	0.4440	0.3971	0.3555	0.3186	0.2858	0.2567	0.2307	0.2076	0.1869	0.1685	0.1520	0.1372	12
14	0.8700	0.7579	0.6611	0.5775	0.5051	0.4423	0.3878	0.3405	0.2992	0.2633	0.2320	0.2046	0.1807	0.1597	0.1413	0.1252	0.1110	0.0985	14
16	0.8528	0.7284	0.6232	0.5339	0.4581	0.3936	0.3387	0.2919	0.2519	0.2176	0.1883	0.1631	0.1415	0.1229	0.1069	0.0930	0.0811	0.0708	16
18	0.8360	0.7002	0.5874	0.4936	0.4155	0.3503	0.2959	0.2502	0.2120	0.1799	0.1528	0.1300	0.1108	0.0946	0.0808	0.0691	0.0592	0.0508	18
20	0.8195	0.6730	0.5537	0.4564	0.3769	0.3118	0.2584	0.2145	0.1784	0.1486	0.1240	0.1037	0.0868	0.0728	0.0611	0.0514	0.0433	0.0365	20
22	0.8034	0.6468	0.5219	0.4220	0.3418	0.2775	0.2257	0.1839	0.1502	0.1228	0.1007	0.0826	0.0680	0.0560	0.0462	0.0382	0.0316	0.0262	22
24	0.7876	0.6217	0.4919	0.3901	0.3101	0.2470	0.1971	0.1577	0.1264	0.1015	0.0817	0.0659	0.0532	0.0431	0.0349	0.0284	0.0231	0.0188	24
30	0.7419	0.5521	0.4120	0.3083	0.2314	0.1741	0.1314	0.0994	0.0754	0.0573	0.0437	0.0334	0.0256	0.0196	0.0151	0.0116	0.0090	0.0070	30
36	0.6989	0.4902	0.3450	0.2437	0.1727	0.1227	0.0875	0.0626	0.0449	0.0323	0.0234	0.0169	0.0123	0.0089	0.0065	0.0048	0.0035	0.0026	36
42	0.6584	0.4353	0.2890	0.1926	0.1288	0.0865	0.0583	0.0395	0.0268	0.0183	0.0125	0.0086	0.0059	0.0041	0.0028	0.0020	0.0014	0.0010	42
48	0.6203	0.3865	0.2420	0.1522	0.0961	0.0610	0.0389	0.0249	0.0160	0.0103	0.0067	0.0043	0.0028	0.0019	0.0012	0.0008	0.0005	0.0004	48
54	0.5843	0.3432	0.2027	0.1203	0.0717	0.0430	0.0259	0.0157	0.0095	0.0058	0.0036	0.0022	0.0014	0.0008	0.0005	0.0003	0.0002	0.0001	54
60	0.5504	0.3048	0.1697	0.0951	0.0535	0.0303	0.0173	0.0099	0.0057	0.0033	0.0019	0.0011	0.0007	0.0004	0.0002	0.0001	0.0001	0.0000	60
72	0.4885	0.2403	0.1190	0.0594	0.0298	0.0151	0.0077	0.0039	0.0020	0.0010	0.0005	0.0003	0.0002	0.0001	0.0000	0.0000	0.0000	0.0000	72

n	19%	20%	21%	22%	23%	24%	25%	26%	27%	28%	29%	30%	31%	32%	33%	34%	35%	36%	n
1	0.8403	0.8333	0.8264	0.8197	0.8130	0.8065	0.8000	0.7937	0.7874	0.7813	0.7752	0.7692	0.7634	0.7576	0.7519	0.7463	0.7407	0.7353	1
2	0.7062	0.6944	0.6830	0.6719	0.6610	0.6504	0.6400	0.6299	0.6200	0.6104	0.6009	0.5917	0.5827	0.5739	0.5653	0.5569	0.5487	0.5407	2
3	0.5934	0.5787	0.5645	0.5507	0.5374	0.5245	0.5120	0.4999	0.4882	0.4768	0.4658	0.4552	0.4448	0.4348	0.4251	0.4156	0.4064	0.3975	3
4	0.4987	0.4823	0.4665	0.4514	0.4369	0.4230	0.4096	0.3968	0.3844	0.3725	0.3611	0.3501	0.3396	0.3294	0.3196	0.3102	0.3011	0.2923	4
5	0.4190	0.4019	0.3855	0.3700	0.3552	0.3411	0.3277	0.3149	0.3027	0.2910	0.2799	0.2693	0.2592	0.2495	0.2403	0.2315	0.2230	0.2149	5
6	0.3521	0.3349	0.3186	0.3033	0.2888	0.2751	0.2621	0.2499	0.2383	0.2274	0.2170	0.2072	0.1979	0.1890	0.1807	0.1727	0.1652	0.1580	6
7	0.2959	0.2791	0.2633	0.2486	0.2348	0.2218	0.2097	0.1983	0.1877	0.1776	0.1682	0.1594	0.1510	0.1432	0.1358	0.1289	0.1224	0.1162	7
8	0.2487	0.2326	0.2176	0.2038	0.1909	0.1789	0.1678	0.1574	0.1478	0.1388	0.1304	0.1226	0.1153	0.1085	0.1021	0.0962	0.0906	0.0854	8
9	0.2090	0.1938	0.1799	0.1670	0.1552	0.1443	0.1342	0.1249	0.1164	0.1084	0.1011	0.0943	0.0880	0.0822	0.0768	0.0718	0.0671	0.0628	9
10	0.1756	0.1615	0.1486	0.1369	0.1262	0.1164	0.1074	0.0992	0.0916	0.0847	0.0784	0.0725	0.0672	0.0623	0.0577	0.0536	0.0497	0.0462	10
11	0.1476	0.1346	0.1228	0.1122	0.1026	0.0938	0.0859	0.0787	0.0721	0.0662	0.0607	0.0558	0.0513	0.0472	0.0434	0.0400	0.0368	0.0340	11
12	0.1240	0.1122	0.1015	0.0920	0.0834	0.0757	0.0687	0.0625	0.0568	0.0517	0.0471	0.0429	0.0392	0.0357	0.0326	0.0298	0.0273	0.0250	12
14	0.0876	0.0779	0.0693	0.0618	0.0551	0.0492	0.0440	0.0393	0.0352	0.0316	0.0283	0.0254	0.0228	0.0205	0.0185	0.0166	0.0150	0.0135	14
16	0.0618	0.0541	0.0474	0.0415	0.0364	0.0320	0.0281	0.0248	0.0218	0.0193	0.0170	0.0150	0.0133	0.0118	0.0104	0.0093	0.0082	0.0073	16
18	0.0437	0.0376	0.0323	0.0279	0.0241	0.0208	0.0180	0.0156	0.0135	0.0118	0.0102	0.0089	0.0077	0.0068	0.0059	0.0052	0.0045	0.0039	18
20	0.0308	0.0261	0.0221	0.0187	0.0159	0.0135	0.0115	0.0098	0.0084	0.0072	0.0061	0.0053	0.0045	0.0039	0.0033	0.0029	0.0025	0.0021	20
22	0.0218	0.0181	0.0151	0.0126	0.0105	0.0088	0.0074	0.0062	0.0052	0.0044	0.0037	0.0031	0.0026	0.0022	0.0019	0.0016	0.0014	0.0012	22
24	0.0154	0.0126	0.0103	0.0085	0.0070	0.0057	0.0047	0.0039	0.0032	0.0027	0.0022	0.0018	0.0015	0.0013	0.0011	0.0009	0.0007	0.0006	24
30	0.0054	0.0042	0.0033	0.0026	0.0020	0.0016	0.0012	0.0010	0.0008	0.0006	0.0005	0.0004	0.0003	0.0002	0.0002	0.0002	0.0001	0.0001	30
36	0.0019	0.0014	0.0010	0.0008	0.0006	0.0004	0.0003	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	36
42	0.0007	0.0005	0.0003	0.0002	0.0002	0.0001	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	42
48	0.0002	0.0002	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	48
54	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	54
60	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	60
72	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	72

FUTURE VALUE of an ***ANNUITY*** (A_{fv}): future worth of a Present Value (A_{pv}) ***compounded*** at interest rate (r) over some time period (n)

$A_{fv} = A_{pv}(((1+r)^n-1)/r)$ or in spreadsheet format $=A_{pv}*(((1+B5)\text{^}A6-1)/B5)$ (for 1% and 1 period)

n	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	n
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1
2	2.0100	2.0200	2.0300	2.0400	2.0500	2.0600	2.0700	2.0800	2.0900	2.1000	2.1100	2.1200	2.1300	2.1400	2.1500	2.1600	2.1700	2.1800	2
3	3.0301	3.0604	3.0909	3.1216	3.1525	3.1836	3.2149	3.2464	3.2781	3.3100	3.3421	3.3744	3.4069	3.4396	3.4725	3.5056	3.5389	3.5724	3
4	4.0604	4.1216	4.1836	4.2465	4.3101	4.3746	4.4399	4.5061	4.5731	4.6410	4.7097	4.7793	4.8498	4.9211	4.9934	5.0665	5.1405	5.2154	4
5	5.1010	5.2040	5.3091	5.4163	5.5256	5.6371	5.7507	5.8666	5.9847	6.1051	6.2278	6.3528	6.4803	6.6101	6.7424	6.8771	7.0144	7.1542	5
6	6.1520	6.3081	6.4684	6.6330	6.8019	6.9753	7.1533	7.3359	7.5233	7.7156	7.9129	8.1152	8.3227	8.5355	8.7537	8.9775	9.2068	9.4420	6
7	7.2135	7.4343	7.6625	7.8983	8.1420	8.3938	8.6540	8.9228	9.2004	9.4872	9.7833	10.0890	10.4047	10.7305	11.0668	11.4139	11.7720	12.1415	7
8	8.2857	8.5830	8.8923	9.2142	9.5491	9.8975	10.2598	10.6366	11.0285	11.4359	11.8594	12.2997	12.7573	13.2328	13.7268	14.2401	14.7733	15.3270	8
9	9.3685	9.7546	10.1591	10.5828	11.0266	11.4913	11.9780	12.4876	13.0210	13.5795	14.1640	14.7757	15.4157	16.0853	16.7858	17.5185	18.2847	19.0859	9
10	10.4622	10.9497	11.4639	12.0061	12.5779	13.1808	13.8164	14.4866	15.1929	15.9374	16.7220	17.5487	18.4197	19.3373	20.3037	21.3215	22.3931	23.5213	10
11	11.5668	12.1687	12.8078	13.4864	14.2068	14.9716	15.7836	16.6455	17.5603	18.5312	19.5614	20.6546	21.8143	23.0445	24.3493	25.7329	27.1999	28.7551	11
12	12.6825	13.4121	14.1920	15.0258	15.9171	16.8699	17.8885	18.9771	20.1407	21.3843	22.7132	24.1331	25.6502	27.2707	29.0017	30.8502	32.8239	34.9311	12
14	14.9474	15.9739	17.0863	18.2919	19.5986	21.0151	22.5505	24.2149	26.0192	27.9750	30.0949	32.3926	34.8827	37.5811	40.5047	43.6720	47.1027	50.8180	14
16	17.2579	18.6393	20.1569	21.8245	23.6575	25.6725	27.8881	30.3243	33.0034	35.9497	39.1899	42.7533	46.6717	50.9804	55.7175	60.9250	66.6488	72.9390	16
18	19.61	21.41	23.41	25.65	28.13	30.91	34.00	37.45	41.30	45.60	50.40	55.75	61.73	68.39	75.84	84.14	93.41	103.74	18
20	22.02	24.30	26.87	29.78	33.07	36.79	41.00	45.76	51.16	57.27	64.20	72.05	80.95	91.02	102.44	115.38	130.03	146.63	20
22	24.47	27.30	30.54	34.25	38.51	43.39	49.01	55.46	62.87	71.40	81.21	92.50	105.49	120.44	137.63	157.41	180.17	206.34	22
24	26.97	30.42	34.43	39.08	44.50	50.82	58.18	66.76	76.79	88.50	102.17	118.16	136.83	158.66	184.17	213.98	248.81	289.49	24
30	34.78	40.57	47.58	56.08	66.44	79.06	94.46	113.28	136.31	164.49	199.02	241.33	293.20	356.79	434.75	530.31	647.44	790.95	30
36	43.08	51.99	63.28	77.60	95.84	119.12	148.91	187.10	236.12	299.13	380.16	484.46	618.75	791.67	1014.35	1301.03	1669.99	2144.65	36
42	51.88	64.86	82.02	104.82	135.23	175.95	230.63	304.24	403.53	537.64	718.98	964.36	1296.53	1746.24	2355.00	3178.79	4293.02	5799.04	42
48	61.22	79.35	104.41	139.26	188.03	256.56	353.27	490.13	684.28	960.17	1352.70	1911.59	2707.63	3841.48	5456.00	7753.78	11021.50	15664.26	48
54	71.14	95.67	131.14	182.85	258.77	370.92	537.32	785.11	1155.13	1708.72	2538.02	3781.25	5645.48	8440.47	12628.82	18900.26	28281.16	42295.96	54
60	81.67	114.05	163.05	237.99	353.58	533.13	813.52	1253.21	1944.79	3034.82	4755.07	7471.64	11761.95	18535.13	29219.99	46057.51	72555.04	114189.67	60
72	104.71	158.06	246.67	396.06	650.90	1089.63	1850.09	3174.78	5490.19	9545.94	16658.08	29133.47	51008.09	89327.78	156363.27	273429.47	477449.86	832202.70	72

n	19%	20%	21%	22%	23%	24%	25%	26%	27%	28%	29%	30%	31%	32%	33%	34%	35%	36%	n
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1
2	2.1900	2.2000	2.2100	2.2200	2.2300	2.2400	2.2500	2.2600	2.2700	2.2800	2.2900	2.3000	2.3100	2.3200	2.3300	2.3400	2.3500	2.3600	2
3	3.6061	3.6400	3.6741	3.7084	3.7429	3.7776	3.8125	3.8476	3.8829	3.9184	3.9541	3.9900	4.0261	4.0624	4.0989	4.1356	4.1725	4.2096	3
4	5.2913	5.3680	5.4457	5.5242	5.6038	5.6842	5.7656	5.8480	5.9313	6.0156	6.1008	6.1870	6.2742	6.3624	6.4515	6.5417	6.6329	6.7251	4
5	7.2966	7.4416	7.5892	7.7396	7.8926	8.0484	8.2070	8.3684	8.5327	8.6999	8.8700	9.0431	9.2192	9.3983	9.5805	9.7659	9.9544	10.1461	5
6	9.6830	9.9299	10.1830	10.4423	10.7079	10.9801	11.2588	11.5442	11.8366	12.1359	12.4423	12.7560	13.0771	13.4058	13.7421	14.0863	14.4384	14.7987	6
7	12.5227	12.9159	13.3214	13.7396	14.1708	14.6153	15.0735	15.5458	16.0324	16.5339	17.0506	17.5828	18.1311	18.6956	19.2770	19.8756	20.4919	21.1262	7
8	15.9020	16.4991	17.1189	17.7623	18.4300	19.1229	19.8419	20.5876	21.3612	22.1634	22.9953	23.8577	24.7517	25.6782	26.6384	27.6333	28.6640	29.7316	8
9	19.9234	20.7989	21.7139	22.6700	23.6690	24.7125	25.8023	26.9404	28.1287	29.3692	30.6639	32.0150	33.4247	34.8953	36.4291	38.0287	39.6964	41.4350	9
10	24.7089	25.9587	27.2738	28.6574	30.1128	31.6434	33.2529	34.9449	36.7235	38.5926	40.5564	42.6195	44.7864	47.0618	49.4507	51.9584	54.5902	57.3516	10
11	30.4035	32.1504	34.0013	35.9620	38.0388	40.2379	42.5661	45.0306	47.6388	50.3985	53.3178	56.4053	59.6701	63.1215	66.7695	70.6243	74.6967	78.9982	11
12	37.1802	39.5805	42.1416	44.8737	47.7877	50.8950	54.2077	57.7386	61.5013	65.5100	69.7800	74.3270	79.1679	84.3204	89.8034	95.6365	101.8406	108.4375	12
14	54.8409	59.1959	63.9095	69.0100	74.5280	80.4961	86.9495	93.9258	101.4654	109.6117	118.4108	127.9125	138.1700	149.2399	161.1833	174.0649	187.9544	202.9260	14
16	79.8502	87.4421	95.7799	104.9345	114.9834	126.0108	138.1085	151.3766	165.9236	181.8677	199.3374	218.4722	239.4235	262.3557	287.4471	314.8910	344.8970	377.6919	16
18	115.27	128.12	142.44	158.40	176.19	195.99	218.04	242.59	269.89	300.25	334.01	371.52	413.18	459.45	510.80	567.76	630.92	700.94	18
20	165.42	186.69	210.76	237.99	268.79	303.60	342.94	387.39	437.57	494.21	558.11	630.17	711.38	802.86	905.88	1021.81	1152.21	1298.82	20
22	236.44	271.03	310.78	356.44	408.88	469.06	538.10	617.28	708.03	812.00	931.04	1067.28	1223.10	1401.23	1604.73	1837.10	2102.25	2404.65	22
24	337.01	392.48	457.22	532.75	620.82	723.46	843.03	982.25	1144.25	1332.66	1551.64	1806.00	2101.28	2443.82	2840.94	3301.03	3833.71	4450.00	24
30	966.71	1181.88	1445.15	1767.08	2160.49	2640.92	3227.17	3942.03	4812.98	5873.23	7162.82	8729.99	10632.75	12940.86	15738.08	19124.86	23221.57	28172.28	30
36	2755	3539	4546	5837	7492	9611	12322	15786	20206	25843	33021	42151	53750	68469	87122	110734	140585	178275	36
42	7833	10577	14276	19257	25955	34950	47016	63178	84796	113670	152181	203466	271661	362202	482228	641092	851038	1128056	42
48	22253	31594	44816	63506	89887	127062	179362	252817	355804	499939	701303	982106	1372965	1916011	2669097	3711514	5151724	7137809	48
54	63204	94348	140662	209411	311273	461908	684224	1011660	1492918	2198769	3231811	4740449	6938859	10135430	14773200	21487215	31185694	45164637	54
60	179495	281733	441467	690501	1077897	1679147	2610118	4048172	6264108	9670301	14893080	22881254	35068404	53614945	81768212	124396733	188780903	285780109	60
72	1447525	2511995	4348374	7507319	12925282	22189627	37982267	64819530	110281872	187050888	316272287	533089476	895718598	1500282583	2504979691	4169332825	6917724898	11441919865	72

PRESENT VALUE of an ***ANNUITY*** (A_{pv}): current worth of a Future Value (A_{fv}) *discounted* at interest rate (r) from some future time period (n)

$A_{pv} = A_{fv}((1-(1/(1+r)^n))/r)$ or in spreadsheet format $=A_{fv}*((1-(1/(1+B5)\text{^}A6))/B5)$ (for 1% and 1 period)

n	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	n
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772	0.8696	0.8621	0.8547	0.8475	1
2	1.9704	1.9416	1.9135	1.8861	1.8594	1.8334	1.8080	1.7833	1.7591	1.7355	1.7125	1.6901	1.6681	1.6467	1.6257	1.6052	1.5852	1.5656	2
3	2.9410	2.8839	2.8286	2.7751	2.7232	2.6730	2.6243	2.5771	2.5313	2.4869	2.4437	2.4018	2.3612	2.3216	2.2832	2.2459	2.2096	2.1743	3
4	3.9020	3.8077	3.7171	3.6299	3.5460	3.4651	3.3872	3.3121	3.2397	3.1699	3.1024	3.0373	2.9745	2.9137	2.8550	2.7982	2.7432	2.6901	4
5	4.8534	4.7135	4.5797	4.4518	4.3295	4.2124	4.1002	3.9927	3.8897	3.7908	3.6959	3.6048	3.5172	3.4331	3.3522	3.2743	3.1993	3.1272	5
6	5.7955	5.6014	5.4172	5.2421	5.0757	4.9173	4.7665	4.6229	4.4859	4.3553	4.2305	4.1114	3.9975	3.8887	3.7845	3.6847	3.5892	3.4976	6
7	6.7282	6.4720	6.2303	6.0021	5.7864	5.5824	5.3893	5.2064	5.0330	4.8684	4.7122	4.5638	4.4226	4.2883	4.1604	4.0386	3.9224	3.8115	7
8	7.6517	7.3255	7.0197	6.7327	6.4632	6.2098	5.9713	5.7466	5.5348	5.3349	5.1461	4.9676	4.7988	4.6389	4.4873	4.3436	4.2072	4.0776	8
9	8.5660	8.1622	7.7861	7.4353	7.1078	6.8017	6.5152	6.2469	5.9952	5.7590	5.5370	5.3282	5.1317	4.9464	4.7716	4.6065	4.4506	4.3030	9
10	9.4713	8.9826	8.5302	8.1109	7.7217	7.3601	7.0236	6.7101	6.4177	6.1446	5.8892	5.6502	5.4262	5.2161	5.0188	4.8332	4.6586	4.4941	10
11	10.3676	9.7868	9.2526	8.7605	8.3064	7.8869	7.4987	7.1390	6.8052	6.4951	6.2065	5.9377	5.6869	5.4527	5.2337	5.0286	4.8364	4.6560	11
12	11.2551	10.5753	9.9540	9.3851	8.8633	8.3838	7.9427	7.5361	7.1607	6.8137	6.4924	6.1944	5.9176	5.6603	5.4206	5.1971	4.9884	4.7932	12
14	13.0037	12.1062	11.2961	10.5631	9.8986	9.2950	8.7455	8.2442	7.7862	7.3667	6.9819	6.6282	6.3025	6.0021	5.7245	5.4675	5.2293	5.0081	14
16	14.7179	13.5777	12.5611	11.6523	10.8378	10.1059	9.4466	8.8514	8.3126	7.8237	7.3792	6.9740	6.6039	6.2651	5.9542	5.6685	5.4053	5.1624	16
18	16.3983	14.9920	13.7535	12.6593	11.6896	10.8276	10.0591	9.3719	8.7556	8.2014	7.7016	7.2497	6.8399	6.4674	6.1280	5.8178	5.5339	5.2732	18
20	18.0456	16.3514	14.8775	13.5903	12.4622	11.4699	10.5940	9.8181	9.1285	8.5136	7.9633	7.4694	7.0248	6.6231	6.2593	5.9288	5.6278	5.3527	20
22	19.6604	17.6580	15.9369	14.4511	13.1630	12.0416	11.0612	10.2007	9.4424	8.7715	8.1757	7.6446	7.1695	6.7429	6.3587	6.0113	5.6964	5.4099	22
24	21.2434	18.9139	16.9355	15.2470	13.7986	12.5504	11.4693	10.5288	9.7066	8.9847	8.3481	7.7843	7.2829	6.8351	6.4338	6.0726	5.7465	5.4509	24
30	25.8077	22.3965	19.6004	17.2920	15.3725	13.7648	12.4090	11.2578	10.2737	9.4269	8.6938	8.0552	7.4957	7.0027	6.5660	6.1772	5.8294	5.5168	30
36	30.1075	25.4888	21.8323	18.9083	16.5469	14.6210	13.0352	11.7172	10.6118	9.6765	8.8786	8.1924	7.5979	7.0790	6.6231	6.2201	5.8617	5.5412	36
42	34.1581	28.2348	23.7014	20.1856	17.4232	15.2245	13.4524	12.0067	10.8134	9.8174	8.9774	8.2619	7.6469	7.1138	6.6478	6.2377	5.8743	5.5502	42
48	37.9740	30.6731	25.2667	21.1951	18.0772	15.6500	13.7305	12.1891	10.9336	9.8969	9.0302	8.2972	7.6705	7.1296	6.6585	6.2450	5.8792	5.5536	48
54	41.5687	32.8383	26.5777	21.9930	18.5651	15.9500	13.9157	12.3041	11.0053	9.9418	9.0585	8.3150	7.6818	7.1368	6.6631	6.2479	5.8811	5.5548	54
60	44.9550	34.7609	27.6756	22.6235	18.9293	16.1614	14.0392	12.3766	11.0480	9.9672	9.0736	8.3240	7.6873	7.1401	6.6651	6.2492	5.8819	5.5553	60
72	51.1504	37.9841	29.3651	23.5156	19.4038	16.4156	14.1763	12.4510	11.0887	9.9895	9.0860	8.3310	7.6911	7.1423	6.6664	6.2499	5.8823	5.5555	72

n	19%	20%	21%	22%	23%	24%	25%	26%	27%	28%	29%	30%	31%	32%	33%	34%	35%	36%	n
1	0.8403	0.8333	0.8264	0.8197	0.8130	0.8065	0.8000	0.7937	0.7874	0.7813	0.7752	0.7692	0.7634	0.7576	0.7519	0.7463	0.7407	0.7353	1
2	1.5465	1.5278	1.5095	1.4915	1.4740	1.4568	1.4400	1.4235	1.4074	1.3916	1.3761	1.3609	1.3461	1.3315	1.3172	1.3032	1.2894	1.2760	2
3	2.1399	2.1065	2.0739	2.0422	2.0114	1.9813	1.9520	1.9234	1.8956	1.8684	1.8420	1.8161	1.7909	1.7663	1.7423	1.7188	1.6959	1.6735	3
4	2.6386	2.5887	2.5404	2.4936	2.4483	2.4043	2.3616	2.3202	2.2800	2.2410	2.2031	2.1662	2.1305	2.0957	2.0618	2.0290	1.9969	1.9658	4
5	3.0576	2.9906	2.9260	2.8636	2.8035	2.7454	2.6893	2.6351	2.5827	2.5320	2.4830	2.4356	2.3897	2.3452	2.3021	2.2604	2.2200	2.1807	5
6	3.4098	3.3255	3.2446	3.1669	3.0923	3.0205	2.9514	2.8850	2.8210	2.7594	2.7000	2.6427	2.5875	2.5342	2.4828	2.4331	2.3852	2.3388	6
7	3.7057	3.6046	3.5079	3.4155	3.3270	3.2423	3.1611	3.0833	3.0087	2.9370	2.8682	2.8021	2.7386	2.6775	2.6187	2.5620	2.5075	2.4550	7
8	3.9544	3.8372	3.7256	3.6193	3.5179	3.4212	3.3289	3.2407	3.1564	3.0758	2.9986	2.9247	2.8539	2.7860	2.7208	2.6582	2.5982	2.5404	8
9	4.1633	4.0310	3.9054	3.7863	3.6731	3.5655	3.4631	3.3657	3.2728	3.1842	3.0997	3.0190	2.9419	2.8681	2.7976	2.7300	2.6653	2.6033	9
10	4.3389	4.1925	4.0541	3.9232	3.7993	3.6819	3.5705	3.4648	3.3644	3.2689	3.1781	3.0915	3.0091	2.9304	2.8553	2.7836	2.7150	2.6495	10
11	4.4865	4.3271	4.1769	4.0354	3.9018	3.7757	3.6564	3.5435	3.4365	3.3351	3.2388	3.1473	3.0604	2.9776	2.8987	2.8236	2.7519	2.6834	11
12	4.6105	4.4392	4.2784	4.1274	3.9852	3.8514	3.7251	3.6059	3.4933	3.3868	3.2859	3.1903	3.0995	3.0133	2.9314	2.8534	2.7792	2.7084	12
14	4.8023	4.6106	4.4317	4.2646	4.1082	3.9616	3.8241	3.6949	3.5733	3.4587	3.3507	3.2487	3.1522	3.0609	2.9744	2.8923	2.8144	2.7403	14
16	4.9377	4.7296	4.5364	4.3567	4.1894	4.0333	3.8874	3.7509	3.6228	3.5026	3.3896	3.2832	3.1829	3.0882	2.9987	2.9140	2.8337	2.7575	16
18	5.0333	4.8122	4.6079	4.4187	4.2431	4.0799	3.9279	3.7861	3.6536	3.5294	3.4130	3.3037	3.2008	3.1039	3.0124	2.9260	2.8443	2.7668	18
20	5.1009	4.8696	4.6567	4.4603	4.2786	4.1103	3.9539	3.8083	3.6726	3.5458	3.4271	3.3158	3.2112	3.1129	3.0202	2.9327	2.8501	2.7718	20
22	5.1486	4.9094	4.6900	4.4882	4.3021	4.1300	3.9705	3.8223	3.6844	3.5558	3.4356	3.3230	3.2173	3.1180	3.0246	2.9365	2.8533	2.7746	22
24	5.1822	4.9371	4.7128	4.5070	4.3176	4.1428	3.9811	3.8312	3.6918	3.5619	3.4406	3.3272	3.2209	3.1210	3.0271	2.9386	2.8550	2.7760	24
30	5.2347	4.9789	4.7463	4.5338	4.3391	4.1601	3.9950	3.8424	3.7009	3.5693	3.4466	3.3321	3.2248	3.1242	3.0297	2.9407	2.8568	2.7775	30
36	5.2531	4.9929	4.7569	4.5419	4.3453	4.1649	3.9987	3.8452	3.7030	3.5709	3.4479	3.3331	3.2256	3.1249	3.0302	2.9411	2.8571	2.7777	36
42	5.2596	4.9976	4.7603	4.5444	4.3471	4.1662	3.9997	3.8459	3.7035	3.5713	3.4482	3.3333	3.2258	3.1250	3.0303	2.9412	2.8571	2.7778	42
48	5.2619	4.9992	4.7614	4.5451	4.3476	4.1665	3.9999	3.8461	3.7037	3.5714	3.4483	3.3333	3.2258	3.1250	3.0303	2.9412	2.8571	2.7778	48
54	5.2627	4.9997	4.7617	4.5454	4.3478	4.1666	4.0000	3.8461	3.7037	3.5714	3.4483	3.3333	3.2258	3.1250	3.0303	2.9412	2.8571	2.7778	54
60	5.2630	4.9999	4.7619	4.5454	4.3478	4.1667	4.0000	3.8462	3.7037	3.5714	3.4483	3.3333	3.2258	3.1250	3.0303	2.9412	2.8571	2.7778	60
72	5.2631	5.0000	4.7619	4.5455	4.3478	4.1667	4.0000	3.8462	3.7037	3.5714	3.4483	3.3333	3.2258	3.1250	3.0303	2.9412	2.8571	2.7778	72