

# Appendix

## ● ● ● Table I

Future value interest factor of \$1 at  $i\%$  at the end of  $n$  periods ( $FVIF_{i,n}$ )

## ● ● ● Table II

Present value interest factor of \$1 at  $i\%$  for  $n$  periods ( $PVIF_{i,n}$ )

## ● ● ● Table III

Future value interest factor of an (ordinary) annuity of \$1 per period at  $i\%$  for  $n$  periods ( $FVIFA_{i,n}$ )

## ● ● ● Table IV

Present value interest factor of an (ordinary) annuity of \$1 per period at  $i\%$  for  $n$  periods ( $PVIFA_{i,n}$ )

## ● ● ● Table V

Area of normal distribution that is  $Z$  standard deviations to the left or right of the mean

*Now go, write it before them in a table, and note it in a book, that it may be for the time to come for ever and ever.*

—ISAIAH 30:8

**Table I** Future value interest factor of \$1 at  $i\%$  at the end of  $n$  periods ( $FVIF_{i,n}$ )

$$FVIF_{i,n} = (1 + i)^n$$

PERIOD ( $n$ )	INTEREST RATE ( $i$ )												PERIOD ( $n$ )
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	
1	1.010	1.020	1.030	1.040	1.050	1.060	1.070	1.080	1.090	1.100	1.110	1.120	1
2	1.020	1.040	1.061	1.082	1.102	1.124	1.145	1.166	1.188	1.210	1.232	1.254	2
3	1.030	1.061	1.093	1.125	1.158	1.191	1.225	1.260	1.295	1.331	1.368	1.405	3
4	1.041	1.082	1.126	1.170	1.216	1.262	1.311	1.360	1.412	1.464	1.518	1.574	4
5	1.051	1.104	1.159	1.217	1.276	1.338	1.403	1.469	1.539	1.611	1.685	1.762	5
6	1.062	1.126	1.194	1.265	1.340	1.419	1.501	1.587	1.677	1.772	1.870	1.974	6
7	1.072	1.149	1.230	1.316	1.407	1.504	1.606	1.714	1.828	1.949	2.076	2.211	7
8	1.083	1.172	1.267	1.369	1.477	1.594	1.718	1.851	1.993	2.144	2.305	2.476	8
9	1.094	1.195	1.305	1.423	1.551	1.689	1.838	1.999	2.172	2.358	2.558	2.773	9
10	1.105	1.219	1.344	1.480	1.629	1.791	1.967	2.159	2.367	2.594	2.839	3.106	10
11	1.116	1.243	1.384	1.539	1.710	1.898	2.105	2.332	2.580	2.853	3.152	3.479	11
12	1.127	1.268	1.426	1.601	1.796	2.012	2.252	2.518	2.813	3.138	3.498	3.896	12
13	1.138	1.294	1.469	1.665	1.886	2.133	2.410	2.720	3.066	3.452	3.883	4.363	13
14	1.149	1.319	1.513	1.732	1.980	2.261	2.579	2.937	3.342	3.797	4.310	4.887	14
15	1.161	1.346	1.558	1.801	2.079	2.397	2.759	3.172	3.642	4.177	4.785	5.474	15
16	1.173	1.373	1.605	1.873	2.183	2.540	2.952	3.426	3.970	4.595	5.311	6.130	16
17	1.184	1.400	1.653	1.948	2.292	2.693	3.159	3.700	4.328	5.054	5.895	6.866	17
18	1.196	1.428	1.702	2.026	2.407	2.854	3.380	3.996	4.717	5.560	6.544	7.690	18
19	1.208	1.457	1.754	2.107	2.527	3.026	3.617	4.316	5.142	6.116	7.263	8.613	19
20	1.220	1.486	1.806	2.191	2.653	3.207	3.870	4.661	5.604	6.727	8.062	9.646	20
25	1.282	1.641	2.094	2.666	3.386	4.292	5.427	6.848	8.623	10.835	13.585	17.000	25
30	1.348	1.811	2.427	3.243	4.322	5.743	7.612	10.063	13.268	17.449	22.892	29.960	30
35	1.417	2.000	2.814	3.946	5.516	7.686	10.677	14.785	20.414	28.102	38.575	52.800	35
40	1.489	2.208	3.262	4.801	7.040	10.286	14.974	21.725	31.409	45.259	65.001	93.051	40
50	1.645	2.692	4.384	7.107	11.467	18.420	29.457	46.902	74.358	117.391	184.565	289.002	50

**Table I (cont.)**

$$FVIF_{i,n} = (1 + i)^n$$

PERIOD ( <i>n</i> )	INTEREST RATE ( <i>i</i> )												PERIOD ( <i>n</i> )
	13%	14%	15%	16%	17%	18%	19%	20%	25%	30%	40%	50%	
1	1.130	1.140	1.150	1.160	1.170	1.180	1.190	1.200	1.250	1.300	1.400	1.500	1
2	1.277	1.300	1.322	1.346	1.369	1.392	1.416	1.440	1.563	1.690	1.960	2.250	2
3	1.443	1.482	1.521	1.561	1.602	1.643	1.685	1.728	1.953	2.197	2.744	3.375	3
4	1.630	1.689	1.749	1.811	1.874	1.939	2.005	2.074	2.441	2.856	3.842	5.063	4
5	1.842	1.925	2.011	2.100	2.192	2.288	2.386	2.488	3.052	3.713	5.378	7.594	5
6	2.082	2.195	2.313	2.436	2.565	2.700	2.840	2.986	3.815	4.827	7.530	11.391	6
7	2.353	2.502	2.660	2.826	3.001	3.185	3.379	3.583	4.768	6.275	10.541	17.086	7
8	2.658	2.853	3.059	3.278	3.511	3.759	4.021	4.300	5.960	8.157	14.758	25.629	8
9	3.004	3.252	3.518	3.803	4.108	4.435	4.785	5.160	7.451	10.604	20.661	38.443	9
10	3.395	3.707	4.046	4.411	4.807	5.234	5.696	6.192	9.313	13.786	28.925	57.665	10
11	3.836	4.226	4.652	5.117	5.624	6.176	6.777	7.430	11.642	17.922	40.496	86.498	11
12	4.335	4.818	5.350	5.936	6.580	7.288	8.064	8.916	14.552	23.298	56.694	129.746	12
13	4.898	5.492	6.153	6.886	7.699	8.599	9.596	10.699	18.190	30.288	79.372	194.620	13
14	5.535	6.261	7.076	7.988	9.007	10.147	11.420	12.839	22.737	39.374	111.120	291.929	14
15	6.254	7.138	8.137	9.266	10.539	11.974	13.590	15.407	28.422	51.186	155.568	437.894	15
16	7.067	8.137	9.358	10.748	12.330	14.129	16.172	18.488	35.527	66.542	217.795	656.841	16
17	7.986	9.276	10.761	12.468	14.426	16.672	19.244	22.186	44.409	86.504	304.914	985.261	17
18	9.024	10.575	12.375	14.463	16.879	19.673	22.901	26.623	55.511	112.455	426.879	1477.892	18
19	10.197	12.056	14.232	16.777	19.748	23.214	27.252	31.948	69.389	146.192	597.630	2216.838	19
20	11.523	13.743	16.367	19.461	23.106	27.393	32.429	38.338	86.736	190.050	836.683	3325.257	20
25	21.231	26.462	32.919	40.874	50.658	62.669	77.388	95.396	264.698	705.641	4499.880	25251.168	25
30	39.116	50.950	66.212	85.850	111.065	143.371	184.675	237.376	807.794	2620.000	24201.432	191751	30
35	72.069	98.100	133.176	180.314	243.503	327.997	440.701	590.668	2465.190	9727.860	130161	1456110	35
40	139.782	188.884	267.864	378.721	533.869	750.378	1051.668	1469.772	7523.164	36118.865	700038	11057332	40
50	450.736	700.233	1083.657	1670.704	2566.215	3927.357	5988.914	9100.438	70064.923	497929.223	20248916	637621500	50

**Table II** Present value interest factor of \$1 at  $i\%$  for  $n$  periods ( $PVIF_{i,n}$ )

$$PVIF_{i,n} = 1/(1 + i)^n$$

PERIOD ( $n$ )	INTEREST RATE ( $i$ )												PERIOD ( $n$ )
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	0.901	0.893	1
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826	0.812	0.797	2
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751	0.731	0.712	3
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683	0.659	0.636	4
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621	0.593	0.567	5
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596	0.564	0.535	0.507	6
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513	0.482	0.452	7
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467	0.434	0.404	8
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424	0.391	0.361	9
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386	0.352	0.322	10
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350	0.317	0.287	11
12	0.887	0.789	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319	0.286	0.257	12
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290	0.258	0.229	13
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263	0.232	0.205	14
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239	0.209	0.183	15
16	0.853	0.728	0.623	0.534	0.458	0.394	0.339	0.292	0.252	0.218	0.188	0.163	16
17	0.844	0.714	0.605	0.513	0.436	0.371	0.317	0.270	0.231	0.198	0.170	0.146	17
18	0.836	0.700	0.587	0.494	0.416	0.350	0.296	0.250	0.212	0.180	0.153	0.130	18
19	0.828	0.686	0.570	0.475	0.396	0.331	0.277	0.232	0.194	0.164	0.138	0.116	19
20	0.820	0.673	0.554	0.456	0.377	0.312	0.258	0.215	0.178	0.149	0.124	0.104	20
25	0.780	0.610	0.478	0.375	0.295	0.233	0.184	0.146	0.116	0.092	0.074	0.059	25
30	0.742	0.552	0.412	0.308	0.231	0.174	0.131	0.099	0.075	0.057	0.044	0.033	30
35	0.706	0.500	0.355	0.253	0.181	0.130	0.094	0.068	0.049	0.036	0.026	0.019	35
40	0.672	0.453	0.307	0.208	0.142	0.097	0.067	0.046	0.032	0.022	0.015	0.011	40
50	0.608	0.372	0.228	0.141	0.087	0.054	0.034	0.021	0.013	0.009	0.005	0.003	50

**Table II (cont.)**

$$PVIF_{i,n} = 1/(1 + i)^n$$

PERIOD ( <i>n</i> )	INTEREST RATE ( <i>i</i> )												PERIOD ( <i>n</i> )
	13%	14%	15%	16%	17%	18%	19%	20%	25%	30%	40%	50%	
1	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833	0.800	0.769	0.714	0.667	1
2	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694	0.640	0.592	0.510	0.444	2
3	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579	0.512	0.455	0.364	0.296	3
4	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482	0.410	0.350	0.260	0.198	4
5	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402	0.328	0.269	0.186	0.132	5
6	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335	0.262	0.207	0.133	0.088	6
7	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279	0.210	0.159	0.095	0.059	7
8	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233	0.168	0.123	0.068	0.039	8
9	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194	0.134	0.094	0.048	0.026	9
10	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162	0.107	0.073	0.035	0.017	10
11	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0.135	0.086	0.056	0.025	0.012	11
12	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0.112	0.069	0.043	0.018	0.008	12
13	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0.093	0.055	0.033	0.013	0.005	13
14	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0.078	0.044	0.025	0.009	0.003	14
15	0.160	0.140	0.123	0.108	0.095	0.084	0.074	0.065	0.035	0.020	0.006	0.002	15
16	0.141	0.123	0.107	0.093	0.081	0.071	0.062	0.054	0.028	0.015	0.005	0.002	16
17	0.125	0.108	0.093	0.080	0.069	0.060	0.052	0.045	0.023	0.012	0.003	0.001	17
18	0.111	0.095	0.081	0.069	0.059	0.051	0.044	0.038	0.018	0.009	0.002	0.001	18
19	0.098	0.083	0.070	0.060	0.051	0.043	0.037	0.031	0.014	0.007	0.002	0.000	19
20	0.087	0.073	0.061	0.051	0.043	0.037	0.031	0.026	0.012	0.005	0.001	0.000	20
25	0.047	0.038	0.030	0.024	0.020	0.016	0.013	0.010	0.004	0.001	0.000	0.000	25
30	0.026	0.020	0.015	0.012	0.009	0.007	0.005	0.004	0.001	0.000	0.000	0.000	30
35	0.014	0.010	0.008	0.006	0.004	0.003	0.002	0.002	0.000	0.000	0.000	0.000	35
40	0.008	0.005	0.004	0.003	0.002	0.001	0.001	0.001	0.000	0.000	0.000	0.000	40
50	0.002	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	50

**Table III** Future value interest factor of an (ordinary) annuity of \$1 per period at  $i\%$  for  $n$  periods ( $FVIFA_{i,n}$ )

$$FVIFA_{i,n} = \sum_{t=1}^n (1+i)^{n-t} = \frac{(1+i)^n - 1}{i}$$

PERIOD ( $n$ )	INTEREST RATE ( $i$ )												PERIOD ( $n$ )	
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%		
1	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1
2	2.010	2.020	2.030	2.040	2.050	2.060	2.070	2.080	2.090	2.100	2.110	2.120	2.120	2
3	3.030	3.060	3.091	3.122	3.153	3.184	3.215	3.246	3.278	3.310	3.342	3.374	3.374	3
4	4.060	4.122	4.184	4.246	4.310	4.375	4.440	4.506	4.573	4.641	4.710	4.779	4.779	4
5	5.101	5.204	5.309	5.416	5.526	5.637	5.751	5.867	5.985	6.105	6.228	6.353	6.353	5
6	6.152	6.308	6.468	6.633	6.802	6.975	7.153	7.336	7.523	7.716	7.913	8.115	8.115	6
7	7.214	7.434	7.662	7.898	8.142	8.394	8.654	8.923	9.200	9.487	9.783	10.089	10.089	7
8	8.286	8.583	8.892	9.214	9.549	9.897	10.260	10.637	11.028	11.436	11.859	12.300	12.300	8
9	9.369	9.755	10.159	10.583	11.027	11.491	11.978	12.488	13.021	13.579	14.164	14.776	14.776	9
10	10.462	10.950	11.464	12.006	12.578	13.181	13.816	14.487	15.193	15.937	16.722	17.549	17.549	10
11	11.567	12.169	12.808	13.486	14.207	14.972	15.784	16.645	17.560	18.531	19.561	20.655	20.655	11
12	12.683	13.412	14.192	15.026	15.917	16.870	17.888	18.977	20.141	21.384	22.713	24.133	24.133	12
13	13.809	14.680	15.618	16.627	17.713	18.882	20.141	21.495	22.953	24.523	26.212	28.029	28.029	13
14	14.947	15.974	17.086	18.292	19.599	21.015	22.550	24.215	26.019	27.975	30.095	32.393	32.393	14
15	16.097	17.293	18.599	20.024	21.579	23.276	25.129	27.152	29.361	31.772	34.405	37.280	37.280	15
16	17.258	18.639	20.157	21.825	23.657	25.673	27.888	30.324	33.003	35.950	39.190	42.753	42.753	16
17	18.430	20.012	21.762	23.698	25.840	28.213	30.840	33.750	36.974	40.545	44.501	48.884	48.884	17
18	19.615	21.412	23.414	25.645	28.132	30.906	33.999	37.450	41.301	45.599	50.396	55.750	55.750	18
19	20.811	22.841	25.117	27.671	30.539	33.760	37.379	41.446	46.018	51.159	56.939	63.440	63.440	19
20	22.019	24.297	26.870	29.778	33.066	36.786	40.995	45.762	51.160	57.275	64.203	72.052	72.052	20
25	28.243	32.030	36.459	41.646	47.727	54.865	63.249	73.106	84.701	98.347	114.413	133.334	133.334	25
30	34.785	40.568	47.575	56.085	66.439	79.058	94.461	113.283	136.308	164.494	199.021	241.333	241.333	30
35	41.660	49.994	60.462	73.652	90.320	111.435	138.237	172.317	215.711	271.024	341.590	431.663	431.663	35
40	48.886	60.402	75.401	95.026	120.800	154.762	199.635	259.057	337.882	442.593	581.826	767.091	767.091	40
50	64.463	84.579	112.797	152.667	209.348	290.336	406.529	573.770	815.084	1163.909	1668.771	2400.018	2400.018	50

**Table III (cont.)**

$$FVIFA_{i,n} = \sum_{t=1}^n (1+i)^{n-t} = \frac{(1+i)^n - 1}{i}$$

PERIOD ( <i>n</i> )	INTEREST RATE ( <i>i</i> )												PERIOD ( <i>n</i> )	
	13%	14%	15%	16%	17%	18%	19%	20%	25%	30%	40%	50%		
1	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1
2	2.130	2.140	2.150	2.160	2.170	2.180	2.190	2.200	2.250	2.300	2.400	2.500	2.500	2
3	3.407	3.440	3.473	3.506	3.539	3.572	3.606	3.640	3.813	3.990	4.360	4.750	4.750	3
4	4.850	4.921	4.993	5.066	5.141	5.215	5.291	5.368	5.766	6.187	7.104	8.125	8.125	4
5	6.480	6.610	6.742	6.877	7.014	7.154	7.297	7.442	8.207	9.043	10.946	13.188	13.188	5
6	8.323	8.536	8.754	8.977	9.207	9.442	9.683	9.930	11.259	12.756	16.324	20.781	20.781	6
7	10.405	10.730	11.067	11.414	11.772	12.142	12.523	12.916	15.073	17.583	23.853	32.172	32.172	7
8	12.757	13.233	13.727	14.240	14.773	15.327	15.902	16.499	19.842	23.858	34.395	49.258	49.258	8
9	15.416	16.085	16.786	17.519	18.285	19.086	19.923	20.799	25.802	32.015	49.153	74.887	74.887	9
10	18.420	19.337	20.304	21.321	22.393	23.521	24.709	25.959	33.253	42.619	69.814	113.330	113.330	10
11	21.814	23.045	24.349	25.733	27.200	28.755	30.404	32.150	42.566	56.405	98.739	170.995	170.995	11
12	25.650	27.271	29.002	30.850	32.824	34.931	37.180	39.581	54.208	74.327	139.235	257.493	257.493	12
13	29.985	32.089	34.352	36.786	39.404	42.219	45.244	48.497	68.760	97.625	195.929	387.239	387.239	13
14	34.883	37.581	40.505	43.672	47.103	50.818	54.841	59.196	86.949	127.913	275.300	581.859	581.859	14
15	40.417	43.842	47.580	51.660	56.110	60.965	66.261	72.035	109.687	167.286	386.420	873.788	873.788	15
16	46.672	50.980	55.717	60.925	66.649	72.939	79.850	87.442	138.109	218.472	541.988	1311.682	1311.682	16
17	53.739	59.118	65.075	71.673	78.979	87.068	96.022	105.931	173.636	285.014	759.784	1968.523	1968.523	17
18	61.725	68.394	75.836	84.141	93.406	103.740	115.266	128.117	218.045	371.518	1064.697	2953.784	2953.784	18
19	70.749	78.969	88.212	98.603	110.285	123.414	138.166	154.740	273.556	483.973	1491.576	4431.676	4431.676	19
20	80.947	91.025	102.444	115.380	130.033	146.638	165.418	186.688	342.945	630.165	2089.206	6648.513	6648.513	20
25	155.620	181.871	212.793	249.214	292.105	342.603	402.042	471.981	1054.791	2348.803	11247.199	50500	50500	25
30	293.199	356.787	434.745	530.312	647.439	790.948	966.712	1181.882	3227.174	8729.985	60501	383500	383500	30
35	546.681	693.573	881.170	1120.713	1426.491	1120.713	2314.214	2948.341	9856.761	32423	325400	2912217	2912217	35
40	1013.704	1342.025	1779.090	2360.757	3134.522	4163.21	5529.829	7343.858	30089	120393	1750092	22114663	22114663	40
50	3459.507	4994.521	7217.716	10435.649	15089.502	21813.1	31515	45497	280256	1659761	50622288	1275242998	1275242998	50

**Table IV Present value interest factor of an (ordinary) annuity of \$1 per period at  $i\%$  for  $n$  periods ( $PVIFA_{i,n}$ )**

$$PVIFA_{i,n} = \sum_{t=1}^n 1/(1+i)^t = \frac{1 - [1/(1+i)^n]}{i}$$

PERIOD ( $n$ )	INTEREST RATE ( $i$ )												PERIOD ( $n$ )
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	0.901	0.893	1
2	1.970	1.942	1.913	1.886	1.859	1.833	1.808	1.783	1.759	1.736	1.713	1.690	2
3	2.941	2.884	2.829	2.775	2.723	2.673	2.624	2.577	2.531	2.487	2.444	2.402	3
4	3.902	3.808	3.717	3.630	3.546	3.465	3.387	3.312	3.240	3.170	3.102	3.037	4
5	4.853	4.713	4.580	4.452	4.329	4.212	4.100	3.993	3.890	3.791	3.696	3.605	5
6	5.795	5.601	5.417	5.242	5.076	4.917	4.767	4.623	4.486	4.355	4.231	4.111	6
7	6.728	6.472	6.230	6.002	5.786	5.582	5.389	5.206	5.033	4.868	4.712	4.564	7
8	7.652	7.326	7.020	6.733	6.463	6.210	5.971	5.747	5.535	5.335	5.146	4.968	8
9	8.566	8.162	7.786	7.435	7.108	6.802	6.515	6.247	5.995	5.759	5.537	5.328	9
10	9.471	8.983	8.530	8.111	7.722	7.360	7.024	6.710	6.418	6.145	5.889	5.650	10
11	10.368	9.787	9.253	8.760	8.306	7.887	7.499	7.139	6.805	6.495	6.207	5.938	11
12	11.255	10.575	9.954	9.385	8.863	8.384	7.943	7.536	7.161	6.814	6.492	6.194	12
13	12.134	11.348	10.635	9.986	9.394	8.853	8.358	7.904	7.487	7.103	6.750	6.424	13
14	13.004	12.106	11.296	10.563	9.899	9.295	8.745	8.244	7.786	7.367	6.982	6.628	14
15	13.865	12.849	11.938	11.118	10.380	9.712	9.108	8.560	8.061	7.606	7.191	6.811	15
16	14.718	13.578	12.561	11.652	10.838	10.106	9.447	8.851	8.313	7.824	7.379	6.974	16
17	15.562	14.292	13.166	12.166	11.274	10.477	9.763	9.122	8.544	8.022	7.549	7.120	17
18	16.398	14.992	13.754	12.659	11.690	10.828	10.059	9.372	8.756	8.201	7.702	7.250	18
19	17.226	15.679	14.324	13.134	12.085	11.158	10.336	9.604	8.950	8.365	7.839	7.366	19
20	18.046	16.352	14.877	13.590	12.462	11.470	10.594	9.818	9.129	8.514	7.963	7.469	20
25	22.023	19.524	17.413	15.622	14.094	12.784	11.654	10.675	9.823	9.077	8.422	7.843	25
30	25.808	22.396	19.601	17.292	15.373	13.765	12.409	11.258	10.274	9.427	8.694	8.055	30
35	29.409	24.999	21.487	18.665	16.374	14.498	12.948	11.655	10.567	9.644	8.855	8.176	35
40	32.835	27.356	23.115	19.793	17.159	15.046	13.332	11.925	10.757	9.779	8.951	8.244	40
50	39.196	31.424	25.730	21.482	18.256	15.762	13.801	12.233	10.962	9.915	9.042	8.304	50



**Table IV (cont.)**

$$PVIFA_{i,n} = \sum_{t=1}^n 1/(1+i)^t = \frac{1 - [1/(1+i)^n]}{i}$$

PERIOD ( <i>n</i> )	INTEREST RATE ( <i>i</i> )												PERIOD ( <i>n</i> )
	13%	14%	15%	16%	17%	18%	19%	20%	25%	30%	40%	50%	
1	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833	0.800	0.769	0.714	0.667	1
2	1.668	1.647	1.626	1.605	1.585	1.566	1.547	1.528	1.440	1.361	1.224	1.111	2
3	2.361	2.322	2.283	2.246	2.210	2.174	2.140	2.106	1.952	1.816	1.589	1.407	3
4	2.974	2.914	2.855	2.798	2.743	2.690	2.639	2.589	2.362	2.166	1.849	1.605	4
5	3.517	3.433	3.352	3.274	3.199	3.127	3.058	2.991	2.689	2.436	2.035	1.737	5
6	3.998	3.889	3.784	3.685	3.589	3.498	3.410	3.326	2.951	2.643	2.168	1.824	6
7	4.423	4.288	4.160	4.039	3.922	3.812	3.706	3.605	3.161	2.802	2.263	1.883	7
8	4.799	4.639	4.487	4.344	4.207	4.078	3.954	3.837	3.329	2.925	2.331	1.922	8
9	5.132	4.946	4.772	4.607	4.451	4.303	4.163	4.031	3.463	3.019	2.379	1.948	9
10	5.426	5.216	5.019	4.833	4.659	4.494	4.339	4.192	3.571	3.092	2.414	1.965	10
11	5.687	5.453	5.234	5.029	4.836	4.656	4.486	4.327	3.656	3.147	2.438	1.977	11
12	5.918	5.660	5.421	5.197	4.988	4.793	4.611	4.439	3.725	3.190	2.456	1.985	12
13	6.122	5.842	5.583	5.342	5.118	4.910	4.715	4.533	3.780	3.223	2.469	1.990	13
14	6.302	6.002	5.724	5.468	5.229	5.008	4.802	4.611	3.824	3.249	2.478	1.993	14
15	6.462	6.142	5.847	5.575	5.324	5.092	4.876	4.675	3.859	3.268	2.484	1.995	15
16	6.604	6.265	5.954	5.668	5.405	5.162	4.938	4.730	3.887	3.283	2.489	1.997	16
17	6.729	6.373	6.047	5.749	5.475	5.222	4.990	4.775	3.910	3.295	2.492	1.998	17
18	6.840	6.467	6.128	5.818	5.534	5.273	5.033	4.812	3.928	3.304	2.494	1.999	18
19	6.938	6.550	6.198	5.877	5.584	5.316	5.070	4.843	3.942	3.311	2.496	1.999	19
20	7.025	6.623	6.259	5.929	5.628	5.353	5.101	4.870	3.954	3.316	2.497	1.999	20
25	7.330	6.873	6.464	6.097	5.766	5.467	5.195	4.948	3.985	3.329	2.499	2.000	25
30	7.496	7.003	6.566	6.177	5.829	5.517	5.235	4.979	3.995	3.332	2.500	2.000	30
35	7.586	7.070	6.617	6.215	5.858	5.539	5.251	4.992	3.998	3.333	2.500	2.000	35
40	7.634	7.105	6.642	6.233	5.871	5.548	5.258	4.997	3.999	3.333	2.500	2.000	40
50	7.675	7.133	6.661	6.246	5.880	5.554	5.262	4.999	4.000	3.333	2.500	2.000	50

**Table V**

Area of normal distribution that is  $Z$  standard deviations to the left or right of the mean

NUMBER OF STANDARD DEVIATIONS FROM MEAN ( $Z$ )	AREA TO THE LEFT OR RIGHT (ONE TAIL)	NUMBER OF STANDARD DEVIATIONS FROM MEAN ( $Z$ )	AREA TO THE LEFT OR RIGHT (ONE TAIL)
0.00	0.5000	1.55	0.0606
0.05	0.4801	1.60	0.0548
0.10	0.4602	1.65	0.0495
0.15	0.4404	1.70	0.0446
0.20	0.4207	1.75	0.0401
0.25	0.4013	1.80	0.0359
0.30	0.3821	1.85	0.0322
0.35	0.3632	1.90	0.0287
0.40	0.3446	1.95	0.0256
0.45	0.3264	2.00	0.0228
0.50	0.3085	2.05	0.0202
0.55	0.2912	2.10	0.0179
0.60	0.2743	2.15	0.0158
0.65	0.2578	2.20	0.0139
0.70	0.2420	2.25	0.0122
0.75	0.2264	2.30	0.0107
0.80	0.2119	2.35	0.0094
0.85	0.1977	2.40	0.0082
0.90	0.1841	2.45	0.0071
0.95	0.1711	2.50	0.0062
1.00	0.1577	2.55	0.0054
1.05	0.1469	2.60	0.0047
1.10	0.1357	2.65	0.0040
1.15	0.1251	2.70	0.0035
1.20	0.1151	2.75	0.0030
1.25	0.1056	2.80	0.0026
1.30	0.0968	2.85	0.0022
1.35	0.0885	2.90	0.0019
1.40	0.0808	2.95	0.0016
1.45	0.0735	3.00	0.0013
1.50	0.0668		

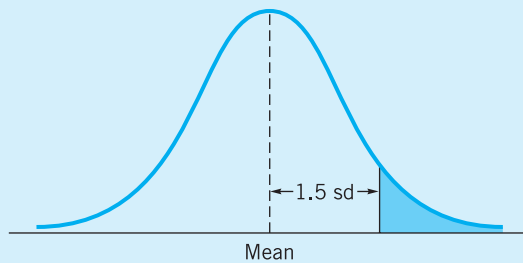


Table V shows the area of the normal distribution that is  $Z$  standard deviations to the left or to the right of the mean. The test is “one tailed” in the sense that we are concerned with one side of the distribution or the other. If we wished to know the area of the curve, or probability, that was 1.5 standard deviations or more from the arithmetic mean on the right, it would be depicted by the colored area in the figure to the left. In Table V we see that this corresponds to 6.68 percent of the total area of the normal distribution. Thus we could say that there was a 6.68 percent probability that the actual outcome would exceed the mean by 1.5 standard deviations.