

TABLE 6 Type E Thermocouple — thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
				Ther	moelectri	ic Voltage	e in Milliv	olts				
-450	-9.830	-9.832	-9.833	-9.834	-9.835							-450
-440	-9.809	-9.812	-9.814	-9.817	-9.819	-9.821	-9.823	-9.825	-9.827	-9.829	-9.830	-440
-430	-9.775	-9.779	-9.782	-9.786	-9.790	-9.793	-9.797	-9.800	-9.803	-9.806	-9.809	-430
-420	-9.729	-9.734	-9.739	-9.744	-9.749	-9.753	-9.758	-9.762	-9.766	-9.771	-9.775	-420
-410	-9.672	-9.678	-9.684	-9.690	-9.696	-9.702	-9.707	-9.713	-9.718	-9.724	-9.729	-410
-400	-9.604	-9.611	-9.618	-9.625	-9.632	-9.639	-9.646	-9.653	-9.659	-9.666	-9.672	-400
-390	-9.525	-9.534	-9.542	-9.550	-9.558	-9.566	-9.574	-9.581	-9.589	-9.597	-9.604	-390
-380	-9.436	-9.446	-9.455	-9.464	-9.473	-9.482	-9.491	-9.500	-9.508	-9.517	-9.525	-380
-370	-9.338	-9.348	-9.358	-9.368	-9.378	-9.388	-9.398	-9.408	-9.417	-9.427	-9.436	-370
-360	-9.229	-9.241	-9.252	-9.263	-9.274	-9.285	-9.295	-9.306	-9.317	-9.327	-9.338	-360
-350	-9.112	-9.124	-9.136	-9.148	-9.160	-9.172	-9.184	-9.195	-9.207	-9.218	-9.229	-350
-340	-8.986	-8.999	-9.012	-9.025	-9.038	-9.050	-9.063	-9.075	-9.088	-9.100	-9.112	-340
-330	-8.852	-8.866	-8.880	-8.893	-8.907	-8.920	-8.934	-8.947	-8.960	-8.973	-8.986	-330
-320	-8.710	-8.725	-8.739	-8.754	-8.768	-8.782	-8.797	-8.811	-8.825	-8.839	-8.852	-320
-310	-8.561	-8.576	-8.591	-8.607	-8.622	-8.637	-8.652	-8.666	-8.681	-8.696	-8.710	-310
-300	-8.404	-8.420	-8.436	-8.452	-8.468	-8.483	-8.499	-8.515	-8.530	-8.546	-8.561	-300
-290	-8.240	-8.257	-8.273	-8.290	-8.307	-8.323	-8.339	-8.356	-8.372	-8.388	-8.404	-290
-280	-8.069	-8.087	-8.104	-8.121	-8.138	-8.155	-8.173	-8.189	-8.206	-8.223	-8.240	-280
-270	-7.891	-7.910	-7.928	-7.945	-7.963	-7.981	-7.999	-8.017	-8.034	-8.052	-8.069	-270
-260	-7.707	-7.726	-7.745	-7.763	-7.782	-7.800	-7.819	-7.837	-7.855	-7.873	-7.891	-260
-250	-7.516	-7.536	-7.555	-7.574	-7.593	-7.613	-7.632	-7.651	-7.670	-7.688	-7.707	-250
-240	-7.319	-7.339	-7.359	-7.379	-7.399	-7.419	-7.438	-7.458	-7.478	-7.497	-7.516	-240
-230	-7.116	-7.137	-7.157	-7.178	-7.198	-7.219	-7.239	-7.259	-7.279	-7.299	-7.319	-230
-220	-6.907	-6.928	-6.950	-6.971	-6.992	-7.013	-7.033	-7.054	-7.075	-7.096	-7.116	-220
-210	-6.692	-6.714	-6.736	-6.757	-6.779	-6.801	-6.822	-6.843	-6.865	-6.886	-6.907	-210
-200	-6.472	-6.494	-6.516	-6.539	-6.561	-6.583	-6.605	-6.627	-6.649	-6.671	-6.692	-200
-190	-6.246	-6.269	-6.291	-6.314	-6.337	-6.359	-6.382	-6.405	-6.427	-6.449	-6.472	-190
-180	-6.014	-6.037	-6.061	-6.084	-6.107	-6.130	-6.154	-6.177	-6.200	-6.223	-6.246	-180
-170	-5.777	-5.801	-5.825	-5.849	-5.872	-5.896	-5.920	-5.943	-5.967	-5.991	-6.014	-170
-160	-5.535	-5.559	-5.584	-5.608	-5.632	-5.656	-5.681	-5.705	-5.729	-5.753	-5.777	-160
-150	-5.287	-5.312	-5.337	-5.362	-5.387	-5.412	-5.436	-5.461	-5.486	-5.510	-5.535	-150
-140	-5.035	-5.060	-5.086	-5.111	-5.136	-5.162	-5.187	-5.212	-5.237	-5.262	-5.287	-140
-130	-4.777	-4.803	-4.829	-4.855	-4.881	-4.907	-4.932	-4.958	-4.984	-5.009	-5.035	-130
-120	-4.515	-4.542	-4.568	-4.594	-4.621	-4.647	-4.673	-4.699	-4.725	-4.751	-4.777	-120
-110	-4.248	-4.275	-4.302	-4.329	-4.355	-4.382	-4.409	-4.436	-4.462	-4.489	-4.515	-110
-100	-3.976	-4.004	-4.031	-4.058	-4.086	-4.113	-4.140	-4.167	-4.194	-4.221	-4.248	-100
-90	-3.700	-3.728	-3.756	-3.784	-3.811	-3.839	-3.867	-3.894	-3.922	-3.949	-3.976	-90
-80	-3.420	-3.448	-3.476	-3.504	-3.532	-3.561	-3.589	-3.617	-3.645	-3.672	-3.700	-80
-70	-3.135	-3.163	-3.192	-3.221	-3.249	-3.278	-3.306	-3.335	-3.363	-3.391	-3.420	-70
-60	-2.846	-2.875	-2.904	-2.933	-2.962	-2.991	-3.020	-3.048	-3.077	-3.106	-3.135	-60
-50	-2.552	-2.582	-2.611	-2.641	-2.670	-2.699	-2.729	-2.758	-2.787	-2.816	-2.846	-50
-40	-2.255	-2.285	-2.315	-2.344	-2.374	-2.404	-2.434	-2.463	-2.493	-2.523	-2.552	-40
-30	-1.953	-1.984	-2.014	-2.044	-2.074	-2.105	-2.135	-2.165	-2.195	-2.225	-2.255	-30
-20	-1.648	-1.679	-1.709	-1.740	-1.771	-1.801	-1.832	-1.862	-1.893	-1.923	-1.953	-20
-10	-1.339	-1.370	-1.401	-1.432	-1.463	-1.494	-1.525	-1.556	-1.587	-1.617	-1.648	-10
0	-1.026	-1.057	-1.089	-1.120	-1.152	-1.183	-1.214	-1.245	-1.277	-1.308	-1.339	0
0	-1.026	-0.994	-0.963	-0.931	-0.900	-0.868	-0.836	-0.805	-0.773	-0.741	-0.709	0
10	-0.709	-0.677	-0.645	-0.614	-0.582	-0.550	-0.517	-0.485	-0.453	-0.421	-0.389	10
20	-0.389	-0.357	-0.324	-0.292	-0.260	-0.227	-0.195	-0.163	-0.130	-0.098	-0.065	20
30	-0.065	-0.033	0.000	0.033	0.065	0.098	0.131	0.163	0.196	0.229	0.262	30
40	0.262	0.294	0.327	0.360	0.393	0.426	0.459	0.492	0.525	0.558	0.591	40
°F	0	1	2	3	4	5	6	7	8	9	10	°F



°F	0	1	2	3	4	5	6	7	8	9	10	°F
				Ther	moelectr	ic Voltage	e in Milliv	olts				
50	0.591	0.624	0.657	0.691	0.724	0.757	0.790	0.824	0.857	0.890	0.924	50
60	0.924	0.957	0.990	1.024	1.057	1.091	1.124	1.158	1.192	1.225	1.259	60
70	1.259	1.292	1.326	1.360	1.394	1.427	1.461	1.495	1.529	1.563	1.597	70
80	1.597	1.631	1.665	1.699	1.733	1.767	1.801	1.835	1.869	1.904	1.938	80
90	1.938	1.972	2.006	2.041	2.075	2.109	2.144	2.178	2.212	2.247	2.281	90
100	2.281	2.316	2.351	2.385	2.420	2.454	2.489	2.524	2.558	2.593	2.628	100
110	2.628	2.663	2.698	2.733	2.767	2.802	2.837	2.872	2.907	2.942	2.977	110
120	2.977	3.012	3.048	3.083	3.118	3.153	3.188	3.224	3.259	3.294	3.330	120
130	3.330	3.365	3.400	3.436	3.471	3.507	3.542	3.578	3.613	3.649	3.685	130
140	3.685	3.720	3.756	3.792	3.827	3.863	3.899	3.935	3.970	4.006	4.042	140
150	4.042	4.078	4.114	4.150	4.186	4.222	4.258	4.294	4.330	4.366	4.403	150
160	4.403	4.439	4.475	4.511	4.547	4.584	4.620	4.656	4.693	4.729	4.766	160
170	4.766	4.802	4.839	4.875	4.912	4.948	4.985	5.021	5.058	5.095	5.131	170
180	5.131	5.168	5.205	5.242	5.278	5.315	5.352	5.389	5.426	5.463	5.500	180
190	5.500	5.537	5.574	5.611	5.648	5.685	5.722	5.759	5.796	5.833	5.871	190
200	5.871	5.908	5.945	5.982	6.020	6.057	6.094	6.132	6.169	6.207	6.244	200
210	6.244	6.281	6.319	6.356	6.394	6.432	6.469	6.507	6.544	6.582	6.620	210
220	6.620	6.658	6.695	6.733	6.771	6.809	6.847	6.884	6.922	6.960	6.998	220
230	6.998	7.036	7.074	7.112	7.150	7.188	7.226	7.264	7.302	7.341	7.379	230
240	7.379	7.417	7.455	7.493	7.532	7.570	7.608	7.647	7.685	7.723	7.762	240
250	7.762	7.800	7.839	7.877	7.916	7.954	7.993	8.031	8.070	8.108	8.147	250
260	8.147	8.186	8.224	8.263	8.302	8.340	8.379	8.418	8.457	8.496	8.535	260
270	8.535	8.573	8.612	8.651	8.690	8.729	8.768	8.807	8.846	8.885	8.924	270
280	8.924	8.963	9.002	9.041	9.081	9.120	9.159	9.198	9.237	9.277	9.316	280
290	9.316	9.355	9.395	9.434	9.473	9.513	9.552	9.591	9.631	9.670	9.710	290
300	9.710	9.749	9.789	9.828	9.868	9.907	9.947	9.987	10.026	10.066	10.106	300
310	10.106	10.145	10.185	10.225	10.265	10.304	10.344	10.384	10.424	10.464	10.503	310
320	10.503	10.543	10.583	10.623	10.663	10.703	10.743	10.783	10.823	10.863	10.903	320
330	10.903	10.943	10.983	11.024	11.064	11.104	11.144	11.184	11.224	11.265	11.305	330
340	11.305	11.345	11.385	11.426	11.466	11.506	11.547	11.587	11.627	11.668	11.708	340
350	11.708	11.749	11.789	11.830	11.870	11.911	11.951	11.992	12.032	12.073	12.113	350
360	12.113	12.154	12.195	12.235	12.276	12.317	12.357	12.398	12.439	12.480	12.520	360
370	12.520	12.561	12.602	12.643	12.684	12.724	12.765	12.806	12.847	12.888	12.929	370
380	12.929	12.970	13.011	13.052	13.093	13.134	13.175	13.216	13.257	13.298	13.339	380
390	13.339	13.380	13.421	13.462	13.504	13.545	13.586	13.627	13.668	13.710	13.751	390
400	13.751	13.792	13.833	13.875	13.916	13.957	13.999	14.040	14.081		14.164	400
410	14.164	14.205	14.247	14.288	14.330	14.371	14.413	14.454	14.496		14.579	410
420	14.579	14.620	14.662	14.704	14.745	14.787	14.828	14.870	14.912		14.995	420
430	14.995	15.037	15.078	15.120	15.162	15.204	15.245	15.287	15.329		15.413	430
440	15.413	15.454	15.496	15.538	15.580	15.622	15.664	15.706	15.748		15.831	440
450	15.831	15.873	15.915	15.957	15.999	16.041	16.083	16.125	16.168	16.210	16.252	450
460	16.252	16.294	16.336	16.378	16.420	16.462	16.504	16.547	16.589	16.631	16.673	460
470	16.673	16.715	16.758	16.800	16.842	16.884	16.927	16.969	17.011	17.054	17.096	470
480	17.096	17.138	17.181	17.223	17.265	17.308	17.350	17.392	17.435	17.477	17.520	480
490	17.520	17.562	17.605	17.647	17.690	17.732	17.775	17.817	17.860	17.902	17.945	490
500	17.945	17.987	18.030	18.073	18.115	18.158	18.200	18.243	18.286		18.371	500
510	18.371	18.414	18.456	18.499	18.542	18.585	18.627	18.670	18.713		18.798	510
520	18.798	18.841	18.884	18.927	18.969	19.012	19.055	19.098	19.141		19.227	520
530	19.227	19.269	19.312	19.355	19.398	19.441	19.484	19.527	19.570		19.656	530
540	19.656	19.699	19.742	19.785	19.828	19.871	19.914	19.957	20.000		20.086	540

 $^{\circ}\text{F}$ 0 1 2 3 4 5 6 7 8 9 10 $^{\circ}\text{F}$



 $\begin{tabular}{lll} \textbf{TABLE 6} & \textit{Type E Thermocouple} --- thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F \\ \end{tabular}$

°F	0	1	2	3	4	5	6	7	8	9	10	°F
				Ther	moelectr	ic Voltage	e in Milliv	olts				
550 560 570 580 590	20.086 20.517 20.950 21.383 21.817	20.129 20.561 20.993 21.426 21.860		20.216 20.647 21.080 21.513 21.947		20.733 21.166 21.600	21.209	20.820 21.253 21.686			20.950 21.383 21.817	550 560 570 580 590
600 610 620 630 640	22.252 22.687 23.124 23.561 23.999	22.295 22.731 23.167 23.604 24.042	22.339 22.774 23.211 23.648 24.086	22.382 22.818 23.255 23.692 24.130	23.298 23.736	23.342 23.780	23.386 23.823	23.867	23.473		23.124	600 610 620 630 640
650 660 670 680 690	24.437 24.876 25.316 25.757 26.198	24.481 24.920 25.360 25.801 26.242	24.525 24.964 25.404 25.845 26.286	24.569 25.008 25.448 25.889 26.331	24.613 25.052 25.493 25.933 26.375	25.537	25.140 25.581	25.625	24.789 25.228 25.669 26.110 26.552	26.154	25.757	650 660 670 680 690
700 710 720 730 740	26.640 27.082 27.525 27.969 28.413	26.684 27.127 27.570 28.013 28.457	26.728 27.171 27.614 28.057 28.501	26.773 27.215 27.658 28.102 28.546	26.817 27.259 27.703 28.146 28.590	26.861 27.304 27.747 28.191 28.635		26.950 27.392 27.836 28.279 28.724	26.994 27.437 27.880 28.324 28.768	27.924		700 710 720 730 740
750 760 770 780 790	28.857 29.302 29.747 30.193 30.639	28.901 29.346 29.792 30.238 30.684	28.946 29.391 29.836 30.282 30.728	28.990 29.435 29.881 30.327 30.773	29.035 29.480 29.925 30.371 30.818	29.079 29.525 29.970 30.416 30.862	29.569 30.015 30.461	29.168 29.614 30.059 30.505 30.952	29.213 29.658 30.104 30.550 30.996	29.703	29.302 29.747 30.193 30.639 31.086	750 760 770 780 790
800 810 820 830 840	31.086 31.533 31.980 32.427 32.875	31.130 31.577 32.025 32.472 32.920	31.175 31.622 32.069 32.517 32.965	31.220 31.667 32.114 32.562 33.010	31.264 31.711 32.159 32.606 33.054	31.309 31.756 32.204 32.651 33.099	31.354 31.801 32.248 32.696 33.144	31.846 32.293 32.741	31.443 31.890 32.338 32.786 33.234	31.488 31.935 32.383 32.830 33.278	31.533 31.980 32.427 32.875 33.323	800 810 820 830 840
850 860 870 880 890	33.323 33.772 34.220 34.669 35.118	34.265		33.458 33.906 34.355 34.804 35.253		34.445 34.893						850 860 870 880 890
900 910 920 930 940	35.567 36.016 36.466 36.915 37.365	35.612 36.061 36.511 36.960 37.410	35.657 36.106 36.556 37.005 37.455	35.702 36.151 36.601 37.050 37.500	35.747 36.196 36.646 37.095 37.545	35.792 36.241 36.691 37.140 37.590	35.837 36.286 36.736 37.185 37.635	35.882 36.331 36.781 37.230 37.680	35.927 36.376 36.826 37.275 37.725	37.320		900 910 920 930 940
950 960 970 980 990	37.815 38.265 38.714 39.164 39.614	37.860 38.309 38.759 39.209 39.659	37.905 38.354 38.804 39.254 39.704	37.950 38.399 38.849 39.299 39.749	37.995 38.444 38.894 39.344 39.794	38.040 38.489 38.939 39.389 39.839	38.085 38.534 38.984 39.434 39.884	39.029	38.175 38.624 39.074 39.524 39.974	39.119 39.569	38.265 38.714 39.164 39.614 40.064	950 960 970 980 990
1000 1010 1020 1030 1040	41.412	40.109 40.558 41.008 41.457 41.907		40.199 40.648 41.098 41.547 41.997	40.243 40.693 41.143 41.592 42.042	40.738 41.188 41.637	41.682		40.873 41.323 41.772	40.918 41.368	40.963 41.412 41.862	1000 1010 1020 1030 1040



°F	0	1	2	3	4	5	6	7	8	9	10	°F
				Ther	moelectr	ic Voltage	e in Milliv	olts				
1050	42.311	42.356	42.401	42.446	42.491	42.536	42.581	42.626	42.671	42.715	42.760	1050
1060	42.760	42.805	42.850	42.895	42.940	42.985	43.030	43.075	43.120	43.165	43.209	1060
1070	43.209	43.254	43.299	43.344	43.389	43.434	43.479	43.524	43.569	43.613	43.658	1070
1080	43.658	43.703	43.748	43.793	43.838	43.883	43.928	43.972	44.017	44.062	44.107	1080
1090	44.107	44.152	44.197	44.242	44.286	44.331	44.376	44.421	44.466	44.511	44.555	1090
1100	44.555	44.600	44.645	44.690	44.735	44.780	44.824	44.869	44.914	44.959	45.004	1100
1110	45.004	45.049	45.093	45.138	45.183	45.228	45.273	45.317	45.362	45.407	45.452	1110
1120	45.452	45.497	45.541	45.586	45.631	45.676	45.720	45.765	45.810	45.855	45.900	1120
1130	45.900	45.944	45.989	46.034	46.079	46.123	46.168	46.213	46.258	46.302	46.347	1130
1140	46.347	46.392	46.437	46.481	46.526	46.571	46.616	46.660	46.705	46.750	46.794	1140
1150	46.794	46.839	46.884	46.929	46.973	47.018	47.063	47.107	47.152	47.197	47.241	1150
1160	47.241	47.286	47.331	47.375	47.420	47.465	47.509	47.554	47.599	47.643	47.688	1160
1170	47.688	47.733	47.777	47.822	47.867	47.911	47.956	48.001	48.045	48.090	48.135	1170
1180	48.135	48.179	48.224	48.268	48.313	48.358	48.402	48.447	48.492	48.536	48.581	1180
1190	48.581	48.625	48.670	48.715	48.759	48.804	48.848	48.893	48.937	48.982	49.027	1190
1200	49.027	49.071	49.116	49.160	49.205	49.249	49.294	49.338	49.383	49.428	49.472	1200
1210	49.472	49.517	49.561	49.606	49.650	49.695	49.739	49.784	49.828	49.873	49.917	1210
1220	49.917	49.962	50.006	50.051	50.095	50.140	50.184	50.229	50.273	50.318	50.362	1220
1230	50.362	50.407	50.451	50.495	50.540	50.584	50.629	50.673	50.718	50.762	50.807	1230
1240	50.807	50.851	50.895	50.940	50.984	51.029	51.073	51.118	51.162	51.206	51.251	1240
1250	51.251	51.295	51.340	51.384	51.428	51.473	51.517	51.561	51.606	51.650	51.695	1250
1260	51.695	51.739	51.783	51.828	51.872	51.916	51.961	52.005	52.049	52.094	52.138	1260
1270	52.138	52.182	52.227	52.271	52.315	52.360	52.404	52.448	52.493	52.537	52.581	1270
1280	52.581	52.625	52.670	52.714	52.758	52.803	52.847	52.891	52.935	52.980	53.024	1280
1290	53.024	53.068	53.112	53.157	53.201	53.245	53.289	53.334	53.378	53.422	53.466	1290
1300	53.466	53.510	53.555	53.599	53.643	53.687	53.732	53.776	53.820	53.864	53.908	1300
1310	53.908	53.952	53.997	54.041	54.085	54.129	54.173	54.218	54.262	54.306	54.350	1310
1320	54.350	54.394	54.438	54.482	54.527	54.571	54.615	54.659	54.703	54.747	54.791	1320
1330	54.791	54.835	54.879	54.924	54.968	55.012	55.056	55.100	55.144	55.188	55.232	1330
1340	55.232	55.276	55.320	55.364	55.408	55.453	55.497	55.541	55.585	55.629	55.673	1340
1350	55.673	55.717	55.761	55.805	55.849		55.937	55.981	56.025	56.069	56.113	1350
1360	56.113	56.157	56.201	56.245	56.289		56.377	56.421	56.465	56.509	56.553	1360
1370	56.553	56.597	56.641	56.685	56.729		56.816	56.860	56.904	56.948	56.992	1370
1380	56.992	57.036	57.080	57.124	57.168		57.256	57.300	57.344	57.387	57.431	1380
1390	57.431	57.475	57.519	57.563	57.607		57.695	57.738	57.782	57.826	57.870	1390
1400 1410 1420 1430 1440	57.870 58.308 58.746 59.184 59.621	57.914 58.352 58.790 59.228 59.665	57.958 58.396 58.834 59.271 59.708	58.002 58.440 58.878 59.315 59.752	58.045 58.484 58.921 59.359 59.796	58.089 58.527 58.965 59.402 59.839	58.133 58.571 59.009 59.446 59.883	58.177 58.615 59.053 59.490 59.927	58.221 58.659 59.096 59.534 59.970		59.621	1400 1410 1420 1430 1440
1450 1460 1470 1480 1490	60.058 60.494 60.930 61.366 61.801	60.101 60.538 60.974 61.409 61.845	60.145 60.581 61.017 61.453 61.888	60.189 60.625 61.061 61.496 61.932	60.232 60.669 61.105 61.540 61.975	60.276 60.712 61.148 61.583 62.018	61.192 61.627	60.799 61.235	60.407 60.843 61.279 61.714 62.149	60.887 61.322	61.366 61.801	1450 1460 1470 1480 1490
1500 1510 1520 1530 1540	62.236 62.670 63.104 63.538 63.971	62.279 62.714 63.148 63.581 64.014	62.323 62.757 63.191 63.624 64.057	62.366 62.800 63.234 63.668 64.101	62.410 62.844 63.278 63.711 64.144	63.321 63.754	62.496 62.931 63.364 63.798 64.230	63.841	63.451 63.884	63.061 63.494 63.927	63.971	1500 1510 1520 1530 1540



TABLE 6 Type E Thermocouple — thermoelectric voltage as a function of temperature (°F); reference junctions at 32 °F

°F	0	1	2	3	4	5	6	7	8	9	10	°F
Thermoelectric Voltage in Millivolts												
1550	64.403	64.447	64.490	64.533	64.576	64.619	64.663	64.706	64.749	64.792	64.835	1550
1560	64.835	64.879	64.922	64.965	65.008	65.051	65.094	65.138	65.181	65.224	65.267	1560
1570	65.267	65.310	65.353	65.396	65.440	65.483	65.526	65.569	65.612	65.655	65.698	1570
1580	65.698	65.741	65.784	65.827	65.871	65.914	65.957	66.000	66.043	66.086	66.129	1580
1590	66.129	66.172	66.215	66.258	66.301	66.344	66.387	66.430	66.473	66.516	66.559	1590
1600	66.559	66.602	66.645	66.688	66.731	66.774	66.817	66.860	66.903	66.946	66.989	1600
1610	66.989	67.031	67.074	67.117	67.160	67.203	67.246	67.289	67.332	67.375	67.418	1610
1620	67.418	67.460	67.503	67.546	67.589	67.632	67.675	67.718	67.760	67.803	67.846	1620
1630	67.846	67.889	67.932	67.974	68.017	68.060	68.103	68.146	68.188	68.231	68.274	1630
1640	68.274	68.317	68.359	68.402	68.445	68.488	68.530	68.573	68.616	68.659	68.701	1640
1650	68.701	68.744	68.787	68.829	68.872	68.915	68.957	69.000	69.043	69.085	69.128	1650
1660	69.128	69.171	69.213	69.256	69.298	69.341	69.384	69.426	69.469	69.511	69.554	1660
1670	69.554	69.597	69.639	69.682	69.724	69.767	69.809	69.852	69.894	69.937	69.979	1670
1680	69.979	70.022	70.064	70.107	70.149	70.192	70.234	70.277	70.319	70.362	70.404	1680
1690	70.404	70.447	70.489	70.531	70.574	70.616	70.659	70.701	70.744	70.786	70.828	1690
1700	70.828	70.871	70.913	70.955	70.998	71.040	71.082	71.125	71.167	71.209	71.252	1700
1710	71.252	71.294	71.336	71.379	71.421	71.463	71.506	71.548	71.590	71.632	71.675	1710
1720	71.675	71.717	71.759	71.801	71.844	71.886	71.928	71.970	72.012	72.055	72.097	1720
1730	72.097	72.139	72.181	72.223	72.266	72.308	72.350	72.392	72.434	72.476	72.518	1730
1740	72.518	72.561	72.603	72.645	72.687	72.729	72.771	72.813	72.855	72.897	72.939	1740
1750	72.939	72.981	73.023	73.066	73.108	73.150	73.192	73.234	73.276	73.318	73.360	1750
1760	73.360	73.402	73.444	73.486	73.528	73.570	73.612	73.654	73.696	73.738	73.780	1760
1770	73.780	73.821	73.863	73.905	73.947	73.989	74.031	74.073	74.115	74.157	74.199	1770
1780	74.199	74.241	74.283	74.324	74.366	74.408	74.450	74.492	74.534	74.576	74.618	1780
1790	74.618	74.659	74.701	74.743	74.785	74.827	74.869	74.910	74.952	74.994	75.036	1790
1800 1810 1820 1830	75.036 75.454 75.872 76.289	75.078 75.496 75.913 76.331	75.120 75.538 75.955 76.373	75.161 75.579 75.997	75.203 75.621 76.039	75.245 75.663 76.081	75.287 75.705 76.122	75.329 75.746 76.164	75.370 75.788 76.206	75.412 75.830 76.248	75.454 75.872 76.289	1800 1810 1820 1830