

Retirement Benefit Reduction Factors



Calculating the Reduced Benefit

VRS applies a reduction factor to your unreduced retirement benefit amount if you retire with a reduced benefit or under the Survivor Option, the Partial Lump-Sum Option Payment (PLOP) or the Advance Pension Option. The following pages list the reduction factors used for these calculations. For more information about retirement, select from the following links:

- [Retirement Eligibility at a Glance](#)
- [Benefit Payout Options](#)
- [Member Handbooks and Guides](#)

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Virginia Retirement System

Early Retirement Reduction Factors

Virginia Retirement System (VRS)



Early Retirement Reduction Factors (ERF)

If you are retiring between ages 55 and 65 with fewer than 30 years of service, refer to both the factor for age and for service and use the factor that gives you the higher benefit. If you are retiring with fewer than 20 years of service, use the age factor.

Early Retirement					
Age	Service	Factor	Age	Service	Factor
65 - 0	30 - +	1.000	60 - 0	25 - 0	.7000
64 - 11	29 - 11	.9950	59 - 11	24 - 11	.6960
10	10	.9900	10	10	.6920
9	9	.9850	9	9	.6880
8	8	.9800	8	8	.6840
7	7	.9750	7	7	.6800
6	6	.9700	6	6	.6760
5	5	.9650	5	5	.6720
4	4	.9600	4	4	.6680
3	3	.9550	3	3	.6640
2	2	.9500	2	2	.6600
1	1	.9450	1	1	.6560
64 - 0	29 - 0	.9400	59 - 0	24 - 0	.6520
63 - 11	28 - 11	.9350	58 - 11	23 - 11	.6480
10	10	.9300	10	10	.6440
9	9	.9250	9	9	.6400
8	8	.9200	8	8	.6360
7	7	.9150	7	7	.6320
6	6	.9100	6	6	.6280
5	5	.9050	5	5	.6240
4	4	.9000	4	4	.6200
3	3	.8950	3	3	.6160
2	2	.8900	2	2	.6120
1	1	.8850	1	1	.6080
63 - 0	28 - 0	.8800	58 - 0	23 - 0	.6040
62 - 1	27 - 11	.8750	57 - 11	22 - 11	.6000
10	10	.8700	10	10	.5960
9	9	.8650	9	9	.5920
8	8	.8600	8	8	.5880
7	7	.8550	7	7	.5840
6	6	.8500	6	6	.5800
5	5	.8450	5	5	.5760
4	4	.8400	4	4	.5720
3	3	.8350	3	3	.5680
2	2	.8300	2	2	.5640
1	1	.8250	1	1	.5600
62 - 0	27 - 0	.8200	57 - 0	22 - 0	.5560
61 - 11	26 - 11	.8150	56 - 11	21 - 11	.5520
10	10	.8100	10	10	.5480
9	9	.8050	9	9	.5440
8	8	.8000	8	8	.5400
7	7	.7950	7	7	.5360
6	6	.7900	6	6	.5320
5	5	.7850	5	5	.5280
4	4	.7800	4	4	.5240
3	3	.7750	3	3	.5200
2	2	.7700	2	2	.5160
1	1	.7650	1	1	.5120
61 - 0	26 - 0	.7600	56 - 0	21 - 0	.5080
60 - 11	25 - 11	.7550	55 - 11	20 - 11	.5040
10	10	.7500	10	10	.5000
9	9	.7450	9	9	.4960
8	8	.7400	8	8	.4920
7	7	.7350	7	7	.4880
6	6	.7300	6	6	.4840
5	5	.7250	5	5	.4800
4	4	.7200	4	4	.4760
3	3	.7150	3	3	.4720
2	2	.7100	2	2	.4680
1	1	.7050	1	1	.4640
60 - 0	25 - 0	.7000	55 - 0	20 - 0	.4600

50/10 Early Retirement Reduction Factors

Age		Months Until Age 55	Factor	Age		Months Until Age 55	Factor
Year	Month			Year	Month		
50	0	60	0.640	52	6	30	0.820
50	1	59	0.646	52	7	29	0.826
50	2	58	0.652	52	8	28	0.832
50	3	57	0.658	52	9	27	0.838
50	4	56	0.664	52	10	26	0.844
50	5	55	0.670	52	11	25	0.850
50	6	54	0.676	53	0	24	0.856
50	7	53	0.682	53	1	23	0.862
50	8	52	0.688	53	2	22	0.868
50	9	51	0.694	53	3	21	0.874
50	10	50	0.700	53	4	20	0.880
50	11	49	0.706	53	5	19	0.886
51	0	48	0.712	53	6	18	0.892
51	1	47	0.718	53	7	17	0.898
51	2	46	0.724	53	8	16	0.904
51	3	45	0.730	53	9	15	0.910
51	4	44	0.736	53	10	14	0.916
51	5	43	0.742	53	1	13	0.922
51	6	42	0.748	54	0	12	0.928
51	7	41	0.754	54	1	11	0.934
51	8	40	0.760	54	2	10	0.940
51	9	39	0.766	54	3	9	0.946
51	10	38	0.772	54	4	8	0.952
51	11	37	0.778	54	5	7	0.958
52	0	36	0.784	54	6	6	0.964
52	1	35	0.790	54	7	5	0.970
52	2	34	0.796	54	8	4	0.976
52	3	33	0.802	54	9	3	0.982
52	4	32	0.808	54	10	2	0.988
52	5	31	0.814	54	11	1	0.994

Virginia Retirement System

Early Retirement Reduction Factors

State Police Officers' Retirement System (SPORS)

Early Retirement Reduction Factors (ERF)

If you are retiring as a State police officer, sheriff, law enforcement officer, firefighter or regional jail officer and have not met the requirement of age 60 with five years service or age 50 with 25 years service, the following factors applied to the formula determine your reduced benefit. If you are retiring between ages 50 and 60, find the Early Retirement Factor (ERF) for your age and for your years of service. Use the higher factor. If you have fewer than 15 years of service, use the Age factor.

Age	Service	ERF	Age	Service	ERF
60 - 0	25 - 0	1.0000	55 - 0	20 - 0	.7000
59 - 11	24 - 11	.9950	54 - 11	19 - 11	.6960
10	10	.9900	10	10	.6920
9	9	.9850	9	9	.6880
8	8	.9800	8	8	.6840
7	7	.9750	7	7	.6800
6	6	.9700	6	6	.6760
5	5	.9650	5	5	.6720
4	4	.9600	4	4	.6680
3	3	.9550	3	3	.6640
2	2	.9500	2	2	.6600
1	1	.9450	1	1	.6560
59 - 0	24 - 0	.9400	54 - 0	19 - 0	.6520
58 - 11	23 - 11	.9350	53 - 11	18 - 11	.6480
10	10	.9300	10	10	.6440
9	9	.9250	9	9	.6400
8	8	.9200	8	8	.6360
7	7	.9150	7	7	.6320
6	6	.9100	6	6	.6280
5	5	.9050	5	5	.6240
4	4	.9000	4	4	.6200
3	3	.8950	3	3	.6160
2	2	.8900	2	2	.6120
1	1	.8850	1	1	.6080
58 - 0	23 - 0	.8800	53 - 0	18 - 0	.6040
57 - 11	22 - 11	.8750	52 - 11	17 - 11	.6000
10	10	.8700	10	10	.5960
9	9	.8650	9	9	.5920
8	8	.8600	8	8	.5880
7	7	.8550	7	7	.5840
6	6	.8500	6	6	.5800
5	5	.8450	5	5	.5760
4	4	.8400	4	4	.5720
3	3	.8350	3	3	.5680
2	2	.8300	2	2	.5640
1	1	.8250	1	1	.5600
57 - 0	22 - 0	.8200	52 - 0	17 - 0	.5560
56 - 11	21 - 11	.8150	51 - 11	16 - 11	.5520
10	10	.8100	10	10	.5480
9	9	.8050	9	9	.5440
8	8	.8000	8	8	.5400
7	7	.7950	7	7	.5360
6	6	.7900	6	6	.5320
5	5	.7850	5	5	.5280
4	4	.7800	4	4	.5240
3	3	.7750	3	3	.5200
2	2	.7700	2	2	.5160
1	1	.7650	1	1	.5120
56 - 0	21 - 0	.7600	51 - 0	16 - 0	.5080
55 - 11	20 - 11	.7550	50 - 11	15 - 11	.5040
10	10	.7500	10	10	.5000
9	9	.7450	9	9	.4960
8	8	.7400	8	8	.4920
7	7	.7350	7	7	.4880
6	6	.7300	6	6	.4840
5	5	.7250	5	5	.4800
4	4	.7200	4	4	.4760
3	3	.7150	3	3	.4720
2	2	.7100	2	2	.4680
1	1	.7050	1	1	.4640
55 - 0	20 - 0	.7000	50 - 0	15 - 0	.4600

Virginia Retirement System

Early Retirement Reduction Factors

Virginia Law Officers' Retirement System (VaLORS)

Appendix

Early Retirement Reduction Factors (ERF)

If you are retiring between ages 50 and 60 with 15 or more years of service, refer to both the factor for age and for service and use the factor that gives you the higher benefit. If you are retiring with fewer than 15 years of service, use the age factor.

Age	Years of Service	ERF	Age	Years of Service	ERF
60-0	25+	1.0000	54-11	19-11	0.6960
59-11	24-11	0.9950	54-10	19-10	0.6920
59-10	24-10	0.9900	54-9	19-9	0.6880
59-9	24-9	0.9850	54-8	19-8	0.6840
59-8	24-8	0.9800	54-7	19-7	0.6800
59-7	24-7	0.9750	54-6	19-6	0.6760
59-6	24-6	0.9700	54-5	19-5	0.6720
59-5	24-5	0.9650	54-4	19-4	0.6680
59-4	24-4	0.9600	54-3	19-3	0.6640
59-3	24-3	0.9550	54-2	19-2	0.6600
59-2	24-2	0.9500	54-1	19-1	0.6560
59-1	24-1	0.9450	54-0	19-0	0.6520
59-0	24-0	0.9400	53-11	18-11	0.6480
58-11	23-11	0.9350	53-10	18-10	0.6440
58-10	23-10	0.9300	53-9	18-9	0.6400
58-9	23-9	0.9250	53-8	18-8	0.6360
58-8	23-8	0.9200	53-7	18-7	0.6320
58-7	23-7	0.9150	53-6	18-6	0.6280
58-6	23-6	0.9100	53-5	18-5	0.6240
58-5	23-5	0.9050	53-4	18-4	0.6200
58-4	23-4	0.9000	53-3	18-3	0.6160
58-3	23-3	0.8950	53-2	18-2	0.6120
58-2	23-2	0.8900	53-1	18-1	0.6080
58-1	23-1	0.8850	53-0	18-0	0.6040
58-0	23-0	0.8800	52-11	17-11	0.6000
57-11	22-11	0.8750	52-10	17-10	0.5960
57-10	22-10	0.8700	52-9	17-9	0.5920
57-9	22-9	0.8650	52-8	17-8	0.5880
57-8	22-8	0.8600	52-7	17-7	0.5840
57-7	22-7	0.8550	52-6	17-6	0.5800
57-6	22-6	0.8500	52-5	17-5	0.5760
57-5	22-5	0.8450	52-4	17-4	0.5720
57-4	22-4	0.8400	52-3	17-3	0.5680
57-3	22-3	0.8350	52-2	17-2	0.5640
57-2	22-2	0.8300	52-1	17-1	0.5600
57-1	22-1	0.8250	52-0	17-0	0.5560
57-0	22-0	0.8200	51-11	16-11	0.5520
56-11	21-11	0.8150	51-10	16-10	0.5480
56-10	21-10	0.8100	51-9	16-9	0.5440
56-9	21-9	0.8050	51-8	16-8	0.5400
56-8	21-8	0.8000	51-7	16-7	0.5360
56-7	21-7	0.7950	51-6	16-6	0.5320
56-6	21-6	0.7900	51-5	16-5	0.5280
56-5	21-5	0.7850	51-4	16-4	0.5240
56-4	21-4	0.7800	51-3	16-3	0.5200
56-3	21-3	0.7750	51-2	16-2	0.5160
56-2	21-2	0.7700	51-1	16-1	0.5120
56-1	21-1	0.7650	51-0	16-0	0.5080
56-0	21-0	0.7600	50-11	15-11	0.5040
55-11	20-11	0.7550	50-10	15-10	0.5000
55-10	20-10	0.7500	50-9	15-9	0.4960
55-9	20-9	0.7450	50-8	15-8	0.4920
55-8	20-8	0.7400	50-7	15-7	0.4880
55-7	20-7	0.7350	50-6	15-6	0.4840
55-6	20-6	0.7300	50-5	15-5	0.4800
55-5	20-5	0.7250	50-4	15-4	0.4760
55-4	20-4	0.7200	50-3	15-3	0.4720
55-3	20-3	0.7150	50-2	15-2	0.4680
55-2	20-2	0.7100	50-1	15-1	0.4640
55-1	20-1	0.7050	50-0	15-0	0.4600
55-0	20-0	0.7000			

Virginia Retirement System

Early Retirement Reduction Factors Eligible Political Subdivision Employees in Hazardous Duty Positions

Appendix

Early Retirement Reduction Factors (ERF)

If you are retiring between ages 50 and 60 with 15 or more years of service, refer to both the factor for age and for service and use the factor that gives you the higher benefit. If you have fewer than 15 years of service, use the age factor.

Age	Years of Service	ERF	Age	Years of Service	ERF
60-0	25+	1.0000	54-11	19-11	0.6960
59-11	24-11	0.9950	54-10	19-10	0.6920
59-10	24-10	0.9900	54-9	19-9	0.6880
59-9	24-9	0.9850	54-8	19-8	0.6840
59-8	24-8	0.9800	54-7	19-7	0.6800
59-7	24-7	0.9750	54-6	19-6	0.6760
59-6	24-6	0.9700	54-5	19-5	0.6720
59-5	24-5	0.9650	54-4	19-4	0.6680
59-4	24-4	0.9600	54-3	19-3	0.6640
59-3	24-3	0.9550	54-2	19-2	0.6600
59-2	24-2	0.9500	54-1	19-1	0.6560
59-1	24-1	0.9450	54-0	19-0	0.6520
59-0	24-0	0.9400	53-11	18-11	0.6480
58-11	23-11	0.9350	53-10	18-10	0.6440
58-10	23-10	0.9300	53-9	18-9	0.6400
58-9	23-9	0.9250	53-8	18-8	0.6360
58-8	23-8	0.9200	53-7	18-7	0.6320
58-7	23-7	0.9150	53-6	18-6	0.6280
58-6	23-6	0.9100	53-5	18-5	0.6240
58-5	23-5	0.9050	53-4	18-4	0.6200
58-4	23-4	0.9000	53-3	18-3	0.6160
58-3	23-3	0.8950	53-2	18-2	0.6120
58-2	23-2	0.8900	53-1	18-1	0.6080
58-1	23-1	0.8850	53-0	18-0	0.6040
58-0	23-0	0.8800	52-11	17-11	0.6000
57-11	22-11	0.8750	52-10	17-10	0.5960
57-10	22-10	0.8700	52-9	17-9	0.5920
57-9	22-9	0.8650	52-8	17-8	0.5880
57-8	22-8	0.8600	52-7	17-7	0.5840
57-7	22-7	0.8550	52-6	17-6	0.5800
57-6	22-6	0.8500	52-5	17-5	0.5760
57-5	22-5	0.8450	52-4	17-4	0.5720
57-4	22-4	0.8400	52-3	17-3	0.5680
57-3	22-3	0.8350	52-2	17-2	0.5640
57-2	22-2	0.8300	52-1	17-1	0.5600
57-1	22-1	0.8250	52-0	17-0	0.5560
57-0	22-0	0.8200	51-11	16-11	0.5520
56-11	21-11	0.8150	51-10	16-10	0.5480
56-10	21-10	0.8100	51-9	16-9	0.5440
56-9	21-9	0.8050	51-8	16-8	0.5400
56-8	21-8	0.8000	51-7	16-7	0.5360
56-7	21-7	0.7950	51-6	16-6	0.5320
56-6	21-6	0.7900	51-5	16-5	0.5280
56-5	21-5	0.7850	51-4	16-4	0.5240
56-4	21-4	0.7800	51-3	16-3	0.5200
56-3	21-3	0.7750	51-2	16-2	0.5160
56-2	21-2	0.7700	51-1	16-1	0.5120
56-1	21-1	0.7650	51-0	16-0	0.5080
56-0	21-0	0.7600	50-11	15-11	0.5040
55-11	20-11	0.7550	50-10	15-10	0.5000
55-10	20-10	0.7500	50-9	15-9	0.4960
55-9	20-9	0.7450	50-8	15-8	0.4920
55-8	20-8	0.7400	50-7	15-7	0.4880
55-7	20-7	0.7350	50-6	15-6	0.4840
55-6	20-6	0.7300	50-5	15-5	0.4800
55-5	20-5	0.7250	50-4	15-4	0.4760
55-4	20-4	0.7200	50-3	15-3	0.4720
55-3	20-3	0.7150	50-2	15-2	0.4680
55-2	20-2	0.7100	50-1	15-1	0.4640
55-1	20-1	0.7050	50-0	15-0	0.4600
55-0	20-0	0.7000			

Virginia Retirement System

Benefit Payout Option Reduction Factors All Plans

VRS Joint and Survivor Factors
100% Survivor Option
 Effective September 1, 1983

If the retiree's date of birth is on or before July 1, 1945, this table is compared to the survivor option charts on pages 62 and 63 and the more favorable factor is used.

Number of Years of Age Difference	Member Older Than Survivor	Member Younger Than Survivor
0	0.790	0.790
1	0.782	0.798
2	0.774	0.806
3	0.766	0.814
4	0.758	0.822
5	0.750	0.830
6	0.742	0.838
7	0.734	0.846
8	0.726	0.854
9	0.718	0.862
10	0.710	0.870
11	0.702	0.878
12	0.694	0.886
13	0.686	0.894
14	0.678	0.902
15	0.670	0.910
16	0.662	0.918
17	0.654	0.926
18	0.646	0.934
19	0.638	0.942
20	0.630	0.950
21	0.622	
22	0.614	
23	0.606	
24	0.598	
25	0.590	
26	0.582	
27	0.574	
28	0.566	
29	0.558	
30	0.550	
31	0.542	
32	0.534	
33	0.526	
34	0.518	
35	0.510	
36	0.502	

Determining the Maximum Non-Spouse Contingent Annuity Percentage

Use the chart below to determine the maximum survivor percentage that may be paid to a non-spouse contingent annuitant. The benefit amount that may be paid depends on the age difference between you and your survivor and your age at the time you begin to receive benefits. If you will begin receiving benefits before age 70, the age difference between you and your non-spouse survivor is adjusted. The adjustment is equal to the number of years you will receive benefits before age 70.

Example: You are age 68 at retirement. The difference in age between you and your non-spouse survivor is 30 years. You will receive two years of benefits before age 70. The age difference is adjusted by two years to equal 28. The maximum percentage that can be paid to your non-spouse survivor is 62 percent.

If you will begin receiving benefits after age 70, the actual age difference is used.

Maximum Non-spouse Contingent Annuity Percentage

Excess of Member's Age Over Age of Contingent Annuitant	Maximum % of Member's Benefit that may be paid as a Survivor Annuity
10 years or less	100%
11	96%
12	93%
13	90%
14	87%
15	84%
16	82%
17	79%
18	77%
19	75%
20	73%
21	72%
22	70%
23	68%
24	67%
25	66%
26	64%
27	63%
28	62%
29	61%
30	60%
31	59%
32	59%
33	58%
34	57%
35	56%
36	56%
37	55%
38	55%
39	54%
40	54%
41	53%
42	53%
43	53%
44 and greater	52%

If the contingent annuitant is your spouse, these percentage limitations do not apply, regardless of the age difference.

Advance Pension Option Factors

Current Age	Reduction Age							
	62	63	64	65	65-02	65-04	65-06	65-08
50-00	0.3230	0.2914	0.2625	0.2359	0.2318	0.2277	0.2237	0.2196
50-01	0.3254	0.2936	0.2645	0.2377	0.2336	0.2295	0.2254	0.2213
50-02	0.3279	0.2959	0.2665	0.2395	0.2354	0.2312	0.2271	0.2230
50-03	0.3304	0.2981	0.2685	0.2413	0.2371	0.2330	0.2288	0.2246
50-04	0.3328	0.3003	0.2705	0.2431	0.2389	0.2347	0.2305	0.2263
50-05	0.3353	0.3025	0.2725	0.2449	0.2407	0.2364	0.2322	0.2280
50-06	0.3377	0.3048	0.2745	0.2467	0.2424	0.2382	0.2339	0.2296
50-07	0.3402	0.3070	0.2765	0.2485	0.2442	0.2399	0.2356	0.2313
50-08	0.3427	0.3092	0.2785	0.2503	0.2460	0.2417	0.2373	0.2330
50-09	0.3451	0.3115	0.2805	0.2522	0.2478	0.2434	0.2391	0.2347
50-10	0.3476	0.3137	0.2825	0.2540	0.2496	0.2452	0.2408	0.2363
50-11	0.3501	0.3159	0.2845	0.2558	0.2514	0.2469	0.2425	0.2380
51-00	0.3525	0.3182	0.2865	0.2576	0.2531	0.2487	0.2442	0.2397
51-01	0.3552	0.3206	0.2887	0.2596	0.2551	0.2506	0.2461	0.2415
51-02	0.3580	0.3231	0.2909	0.2616	0.2570	0.2525	0.2479	0.2434
51-03	0.3607	0.3255	0.2931	0.2635	0.2590	0.2544	0.2498	0.2453
51-04	0.3634	0.3280	0.2953	0.2655	0.2609	0.2563	0.2517	0.2471
51-05	0.3661	0.3304	0.2976	0.2675	0.2629	0.2582	0.2536	0.2490
51-06	0.3688	0.3329	0.2998	0.2695	0.2648	0.2601	0.2555	0.2508
51-07	0.3716	0.3353	0.3020	0.2715	0.2667	0.2620	0.2574	0.2526
51-08	0.3743	0.3378	0.3042	0.2735	0.2687	0.2640	0.2593	0.2545
51-09	0.3770	0.3402	0.3064	0.2754	0.2707	0.2659	0.2611	0.2563
51-10	0.3797	0.3427	0.3086	0.2774	0.2726	0.2678	0.2630	0.2582
51-11	0.3825	0.3452	0.3108	0.2794	0.2746	0.2697	0.2649	0.2601
52-00	0.3852	0.3476	0.3131	0.2814	0.2765	0.2717	0.2668	0.2619
52-01	0.3882	0.3503	0.3155	0.2836	0.2787	0.2738	0.2688	0.2639
52-02	0.3912	0.3530	0.3179	0.2858	0.2808	0.2759	0.2709	0.2660
52-03	0.3942	0.3557	0.3204	0.2879	0.2830	0.2780	0.2730	0.2680
52-04	0.3972	0.3584	0.3228	0.2901	0.2851	0.2801	0.2751	0.2701
52-05	0.4002	0.3611	0.3252	0.2923	0.2873	0.2822	0.2772	0.2721
52-06	0.4032	0.3638	0.3277	0.2945	0.2894	0.2843	0.2792	0.2741
52-07	0.4062	0.3665	0.3301	0.2967	0.2916	0.2864	0.2813	0.2762
52-08	0.4092	0.3692	0.3326	0.2989	0.2938	0.2885	0.2834	0.2782
52-09	0.4122	0.3719	0.3350	0.3011	0.2959	0.2907	0.2855	0.2803
52-10	0.4152	0.3746	0.3374	0.3033	0.2980	0.2928	0.2875	0.2823
52-11	0.4183	0.3774	0.3399	0.3055	0.3002	0.2949	0.2896	0.2843
53-00	0.4213	0.3800	0.3423	0.3077	0.3024	0.2970	0.2917	0.2864
53-01	0.4246	0.3830	0.3450	0.3101	0.3047	0.2994	0.2940	0.2886
53-02	0.4279	0.3861	0.3477	0.3125	0.3071	0.3017	0.2963	0.2909
53-03	0.4312	0.3890	0.3504	0.3149	0.3095	0.3041	0.2986	0.2932
53-04	0.4345	0.3920	0.3531	0.3174	0.3119	0.3064	0.3009	0.2954
53-05	0.4378	0.3951	0.3558	0.3198	0.3143	0.3087	0.3032	0.2977
53-06	0.4411	0.3980	0.3585	0.3222	0.3166	0.3111	0.3055	0.2999
53-07	0.4444	0.4010	0.3612	0.3246	0.3190	0.3134	0.3078	0.3022
53-08	0.4478	0.4041	0.3639	0.3271	0.3215	0.3157	0.3101	0.3044
53-09	0.4511	0.4070	0.3666	0.3295	0.3238	0.3181	0.3124	0.3067
53-10	0.4544	0.4100	0.3692	0.3319	0.3262	0.3204	0.3147	0.3089
53-11	0.4577	0.4131	0.3720	0.3344	0.3286	0.3228	0.3170	0.3112
54-00	0.4610	0.4160	0.3746	0.3368	0.3310	0.3251	0.3193	0.3134
54-01	0.4647	0.4193	0.3776	0.3395	0.3336	0.3277	0.3218	0.3159
54-02	0.4684	0.4227	0.3806	0.3422	0.3363	0.3303	0.3244	0.3185
54-03	0.4721	0.4260	0.3836	0.3449	0.3389	0.3329	0.3269	0.3210
54-04	0.4757	0.4293	0.3866	0.3475	0.3415	0.3355	0.3295	0.3235
54-05	0.4794	0.4326	0.3896	0.3502	0.3442	0.3381	0.3320	0.3260
54-06	0.4831	0.4359	0.3926	0.3529	0.3468	0.3407	0.3346	0.3285
54-07	0.4867	0.4392	0.3956	0.3556	0.3494	0.3432	0.3371	0.3310
54-08	0.4904	0.4426	0.3986	0.3583	0.3521	0.3459	0.3397	0.3335
54-09	0.4941	0.4459	0.4016	0.3610	0.3547	0.3484	0.3422	0.3360
54-10	0.4977	0.4492	0.4045	0.3636	0.3574	0.3511	0.3448	0.3385
54-11	0.5014	0.4525	0.4076	0.3663	0.3600	0.3537	0.3473	0.3410
55-00	0.5051	0.4558	0.4105	0.3690	0.3627	0.3563	0.3499	0.3435
55-01	0.5091	0.4595	0.4138	0.3720	0.3656	0.3591	0.3527	0.3462
55-02	0.5133	0.4632	0.4172	0.3750	0.3685	0.3620	0.3555	0.3491
55-03	0.5173	0.4668	0.4205	0.3779	0.3714	0.3649	0.3583	0.3518
55-04	0.5214	0.4705	0.4238	0.3809	0.3743	0.3677	0.3611	0.3546
55-05	0.5255	0.4742	0.4271	0.3839	0.3773	0.3706	0.3640	0.3573

Advance Pension Option Factors (continued)

Current Age	Reduction Age							
	62	63	64	65	65-02	65-04	65-06	65-08
55-06	0.5296	0.4779	0.4304	0.3869	0.3802	0.3735	0.3668	0.3601
55-07	0.5336	0.4815	0.4337	0.3898	0.3831	0.3763	0.3696	0.3628
55-08	0.5378	0.4853	0.4371	0.3928	0.3861	0.3792	0.3724	0.3656
55-09	0.5418	0.4889	0.4404	0.3958	0.3890	0.3821	0.3753	0.3684
55-10	0.5459	0.4926	0.4437	0.3988	0.3919	0.3850	0.3781	0.3712
55-11	0.5500	0.4963	0.4470	0.4018	0.3948	0.3879	0.3809	0.3739
56-00	0.5541	0.4999	0.4503	0.4047	0.3977	0.3907	0.3837	0.3767
56-01	0.5586	0.5040	0.4540	0.4080	0.4010	0.3939	0.3868	0.3798
56-02	0.5632	0.5081	0.4577	0.4113	0.4043	0.3971	0.3900	0.3829
56-03	0.5677	0.5122	0.4613	0.4146	0.4075	0.4003	0.3931	0.3860
56-04	0.5722	0.5163	0.4650	0.4179	0.4107	0.4035	0.3962	0.3890
56-05	0.5767	0.5204	0.4687	0.4213	0.4140	0.4067	0.3994	0.3921
56-06	0.5813	0.5244	0.4724	0.4245	0.4172	0.4098	0.4025	0.3952
56-07	0.5858	0.5285	0.4760	0.4278	0.4204	0.4130	0.4056	0.3982
56-08	0.5903	0.5326	0.4797	0.4312	0.4237	0.4162	0.4088	0.4013
56-09	0.5948	0.5367	0.4834	0.4345	0.4270	0.4194	0.4119	0.4044
56-10	0.5994	0.5408	0.4870	0.4378	0.4302	0.4226	0.4150	0.4075
56-11	0.6039	0.5449	0.4908	0.4411	0.4335	0.4258	0.4182	0.4106
57-00	0.6084	0.5489	0.4944	0.4444	0.4367	0.4290	0.4213	0.4136
57-01	0.6135	0.5535	0.4985	0.4481	0.4403	0.4326	0.4248	0.4170
57-02	0.6185	0.5581	0.5026	0.4518	0.4440	0.4362	0.4283	0.4205
57-03	0.6236	0.5626	0.5067	0.4555	0.4476	0.4397	0.4318	0.4240
57-04	0.6286	0.5671	0.5108	0.4591	0.4512	0.4433	0.4353	0.4274
57-05	0.6337	0.5717	0.5149	0.4629	0.4548	0.4468	0.4388	0.4308
57-06	0.6387	0.5763	0.5190	0.4665	0.4584	0.4503	0.4423	0.4342
57-07	0.6437	0.5808	0.5231	0.4702	0.4620	0.4539	0.4458	0.4376
57-08	0.6488	0.5854	0.5272	0.4739	0.4658	0.4575	0.4493	0.4411
57-09	0.6538	0.5899	0.5313	0.4776	0.4694	0.4610	0.4528	0.4445
57-10	0.6588	0.5945	0.5354	0.4813	0.4730	0.4646	0.4563	0.4479
57-11	0.6639	0.5991	0.5395	0.4850	0.4766	0.4682	0.4598	0.4514
58-00	0.6689	0.6036	0.5436	0.4887	0.4803	0.4718	0.4633	0.4548
58-01	0.6745	0.6086	0.5482	0.4928	0.4843	0.4757	0.4672	0.4586
58-02	0.6802	0.6138	0.5528	0.4969	0.4883	0.4797	0.4711	0.4625
58-03	0.6858	0.6188	0.5573	0.5010	0.4924	0.4837	0.4750	0.4663
58-04	0.6914	0.6239	0.5619	0.5051	0.4964	0.4876	0.4789	0.4702
58-05	0.6971	0.6290	0.5665	0.5092	0.5004	0.4916	0.4828	0.4740
58-06	0.7027	0.6341	0.5711	0.5133	0.5044	0.4955	0.4867	0.4778
58-07	0.7083	0.6391	0.5756	0.5174	0.5084	0.4995	0.4906	0.4816
58-08	0.7140	0.6443	0.5802	0.5216	0.5126	0.5035	0.4945	0.4854
58-09	0.7196	0.6493	0.5848	0.5256	0.5166	0.5074	0.4984	0.4893
58-10	0.7252	0.6544	0.5894	0.5297	0.5206	0.5114	0.5023	0.4931
58-11	0.7309	0.6595	0.5940	0.5339	0.5247	0.5154	0.5062	0.4969
59-00	0.7365	0.6646	0.5985	0.5380	0.5287	0.5194	0.5101	0.5007
59-01	0.7428	0.6702	0.6036	0.5426	0.5332	0.5238	0.5144	0.5050
59-02	0.7491	0.6760	0.6088	0.5472	0.5378	0.5283	0.5188	0.5094
59-03	0.7554	0.6816	0.6139	0.5518	0.5423	0.5327	0.5231	0.5136
59-04	0.7617	0.6873	0.6190	0.5564	0.5468	0.5371	0.5275	0.5179
59-05	0.7680	0.6930	0.6241	0.5610	0.5513	0.5415	0.5319	0.5222
59-06	0.7743	0.6986	0.6292	0.5656	0.5558	0.5460	0.5362	0.5264
59-07	0.7806	0.7043	0.6343	0.5702	0.5603	0.5504	0.5406	0.5307
59-08	0.7869	0.7100	0.6395	0.5748	0.5649	0.5549	0.5450	0.5350
59-09	0.7932	0.7157	0.6446	0.5794	0.5694	0.5593	0.5493	0.5393
59-10	0.7994	0.7213	0.6497	0.5840	0.5739	0.5638	0.5536	0.5435
59-11	0.8058	0.7271	0.6548	0.5886	0.5785	0.5683	0.5580	0.5478
60-00	0.8121	0.7327	0.6599	0.5932	0.5830	0.5727	0.5624	0.5521
60-01	0.8191	0.7391	0.6656	0.5983	0.5880	0.5776	0.5673	0.5569
60-02	0.8262	0.7455	0.6714	0.6035	0.5931	0.5827	0.5722	0.5618
60-03	0.8332	0.7518	0.6771	0.6087	0.5982	0.5876	0.5771	0.5666
60-04	0.8403	0.7582	0.6828	0.6138	0.6032	0.5926	0.5819	0.5713
60-05	0.8474	0.7646	0.6886	0.6190	0.6083	0.5975	0.5869	0.5761
60-06	0.8544	0.7709	0.6943	0.6241	0.6133	0.6025	0.5917	0.5809
60-07	0.8615	0.7773	0.7000	0.6293	0.6183	0.6074	0.5966	0.5857
60-08	0.8686	0.7837	0.7058	0.6345	0.6235	0.6125	0.6015	0.5905
60-09	0.8756	0.7901	0.7115	0.6396	0.6286	0.6174	0.6064	0.5953
60-10	0.8826	0.7964	0.7172	0.6447	0.6336	0.6224	0.6113	0.6001
60-11	0.8897	0.8028	0.7230	0.6499	0.6387	0.6275	0.6162	0.6049
61-00	0.8968	0.8092	0.7287	0.6551	0.6438	0.6324	0.6211	0.6097
61-01	0.9047	0.8163	0.7352	0.6608	0.6494	0.6380	0.6265	0.6151

Advance Pension Option Factors (continued)

Current Age	Reduction Age							
	65-10	66	66-02	66-04	66-06	66-08	66-10	67
50-00	0.2155	0.2116	0.2079	0.2042	0.2004	0.1967	0.1930	0.1894
50-01	0.2172	0.2132	0.2095	0.2057	0.2020	0.1982	0.1944	0.1908
50-02	0.2188	0.2149	0.2111	0.2073	0.2035	0.1997	0.1959	0.1923
50-03	0.2204	0.2165	0.2127	0.2088	0.2050	0.2012	0.1974	0.1937
50-04	0.2221	0.2181	0.2142	0.2104	0.2065	0.2027	0.1989	0.1952
50-05	0.2237	0.2197	0.2158	0.2119	0.2081	0.2042	0.2003	0.1966
50-06	0.2254	0.2213	0.2174	0.2135	0.2096	0.2057	0.2018	0.1981
50-07	0.2270	0.2229	0.2190	0.2150	0.2111	0.2072	0.2033	0.1995
50-08	0.2287	0.2245	0.2206	0.2166	0.2127	0.2087	0.2047	0.2010
50-09	0.2303	0.2261	0.2222	0.2182	0.2142	0.2102	0.2062	0.2024
50-10	0.2319	0.2277	0.2238	0.2197	0.2157	0.2117	0.2077	0.2038
50-11	0.2336	0.2294	0.2253	0.2213	0.2173	0.2132	0.2092	0.2053
51-00	0.2352	0.2310	0.2269	0.2228	0.2188	0.2147	0.2106	0.2067
51-01	0.2370	0.2328	0.2287	0.2246	0.2205	0.2163	0.2122	0.2083
51-02	0.2389	0.2345	0.2304	0.2263	0.2222	0.2180	0.2139	0.2099
51-03	0.2407	0.2363	0.2322	0.2280	0.2238	0.2197	0.2155	0.2115
51-04	0.2425	0.2381	0.2339	0.2297	0.2255	0.2213	0.2171	0.2131
51-05	0.2443	0.2399	0.2357	0.2314	0.2272	0.2230	0.2188	0.2147
51-06	0.2461	0.2417	0.2374	0.2331	0.2289	0.2246	0.2204	0.2163
51-07	0.2479	0.2435	0.2392	0.2349	0.2306	0.2263	0.2220	0.2179
51-08	0.2498	0.2453	0.2409	0.2366	0.2323	0.2280	0.2236	0.2195
51-09	0.2516	0.2470	0.2427	0.2383	0.2340	0.2296	0.2252	0.2211
51-10	0.2534	0.2488	0.2444	0.2400	0.2357	0.2313	0.2269	0.2227
51-11	0.2552	0.2506	0.2462	0.2418	0.2374	0.2329	0.2285	0.2243
52-00	0.2570	0.2524	0.2480	0.2435	0.2390	0.2346	0.2301	0.2259
52-01	0.2590	0.2543	0.2499	0.2454	0.2409	0.2364	0.2319	0.2276
52-02	0.2610	0.2563	0.2518	0.2473	0.2428	0.2383	0.2337	0.2294
52-03	0.2630	0.2583	0.2537	0.2492	0.2446	0.2401	0.2355	0.2312
52-04	0.2651	0.2602	0.2557	0.2511	0.2465	0.2419	0.2373	0.2329
52-05	0.2670	0.2622	0.2576	0.2530	0.2484	0.2437	0.2391	0.2347
52-06	0.2690	0.2642	0.2595	0.2548	0.2502	0.2455	0.2409	0.2364
52-07	0.2710	0.2661	0.2614	0.2567	0.2521	0.2474	0.2427	0.2382
52-08	0.2730	0.2681	0.2634	0.2586	0.2539	0.2492	0.2445	0.2400
52-09	0.2750	0.2701	0.2653	0.2605	0.2558	0.2510	0.2462	0.2417
52-10	0.2770	0.2720	0.2673	0.2625	0.2576	0.2528	0.2480	0.2435
52-11	0.2791	0.2740	0.2692	0.2644	0.2595	0.2547	0.2498	0.2452
53-00	0.2810	0.2760	0.2711	0.2663	0.2614	0.2565	0.2516	0.2470
53-01	0.2833	0.2781	0.2733	0.2683	0.2634	0.2585	0.2536	0.2489
53-02	0.2855	0.2803	0.2754	0.2705	0.2655	0.2606	0.2556	0.2509
53-03	0.2877	0.2825	0.2775	0.2725	0.2675	0.2626	0.2576	0.2528
53-04	0.2899	0.2847	0.2797	0.2746	0.2696	0.2646	0.2596	0.2547
53-05	0.2921	0.2868	0.2818	0.2767	0.2717	0.2666	0.2615	0.2567
53-06	0.2943	0.2890	0.2839	0.2788	0.2737	0.2686	0.2635	0.2586
53-07	0.2965	0.2912	0.2860	0.2809	0.2758	0.2706	0.2655	0.2606
53-08	0.2988	0.2934	0.2882	0.2830	0.2778	0.2726	0.2675	0.2625
53-09	0.3010	0.2955	0.2903	0.2851	0.2799	0.2746	0.2694	0.2645
53-10	0.3032	0.2977	0.2925	0.2872	0.2819	0.2767	0.2714	0.2664
53-11	0.3054	0.2999	0.2946	0.2893	0.2840	0.2787	0.2734	0.2683
54-00	0.3076	0.3020	0.2967	0.2914	0.2860	0.2807	0.2754	0.2703
54-01	0.3101	0.3044	0.2991	0.2937	0.2883	0.2829	0.2775	0.2724
54-02	0.3125	0.3069	0.3015	0.2960	0.2906	0.2852	0.2798	0.2746
54-03	0.3150	0.3093	0.3038	0.2984	0.2929	0.2875	0.2819	0.2767
54-04	0.3175	0.3117	0.3062	0.3007	0.2952	0.2897	0.2842	0.2789
54-05	0.3199	0.3141	0.3086	0.3030	0.2975	0.2919	0.2863	0.2811
54-06	0.3223	0.3165	0.3109	0.3053	0.2997	0.2941	0.2885	0.2832
54-07	0.3248	0.3189	0.3133	0.3076	0.3020	0.2964	0.2907	0.2854
54-08	0.3273	0.3213	0.3157	0.3100	0.3043	0.2986	0.2929	0.2875
54-09	0.3297	0.3238	0.3181	0.3123	0.3066	0.3009	0.2951	0.2897
54-10	0.3322	0.3262	0.3204	0.3146	0.3089	0.3031	0.2973	0.2918
54-11	0.3346	0.3286	0.3228	0.3170	0.3112	0.3053	0.2995	0.2940
55-00	0.3371	0.3310	0.3252	0.3193	0.3134	0.3076	0.3017	0.2961
55-01	0.3398	0.3336	0.3278	0.3219	0.3160	0.3101	0.3041	0.2985
55-02	0.3425	0.3363	0.3304	0.3245	0.3185	0.3126	0.3066	0.3009
55-03	0.3452	0.3390	0.3330	0.3270	0.3210	0.3151	0.3090	0.3033
55-04	0.3480	0.3417	0.3356	0.3296	0.3236	0.3175	0.3115	0.3057
55-05	0.3507	0.3443	0.3382	0.3322	0.3261	0.3200	0.3139	0.3081

Advance Pension Option Factors (continued)

Current Age	Reduction Age							
	65-10	66	66-02	66-04	66-06	66-08	66-10	67
55-06	0.3534	0.3470	0.3409	0.3347	0.3286	0.3225	0.3164	0.3105
55-07	0.3561	0.3497	0.3435	0.3373	0.3311	0.3250	0.3188	0.3129
55-08	0.3588	0.3523	0.3462	0.3399	0.3337	0.3275	0.3212	0.3153
55-09	0.3615	0.3550	0.3488	0.3425	0.3362	0.3299	0.3237	0.3177
55-10	0.3642	0.3577	0.3514	0.3451	0.3387	0.3324	0.3261	0.3201
55-11	0.3670	0.3604	0.3540	0.3477	0.3413	0.3349	0.3286	0.3225
56-00	0.3697	0.3630	0.3566	0.3502	0.3438	0.3374	0.3310	0.3249
56-01	0.3727	0.3660	0.3595	0.3531	0.3466	0.3401	0.3337	0.3275
56-02	0.3757	0.3690	0.3625	0.3560	0.3494	0.3430	0.3364	0.3302
56-03	0.3787	0.3719	0.3654	0.3588	0.3522	0.3457	0.3391	0.3328
56-04	0.3818	0.3749	0.3683	0.3617	0.3550	0.3484	0.3418	0.3355
56-05	0.3848	0.3779	0.3712	0.3645	0.3579	0.3512	0.3445	0.3382
56-06	0.3878	0.3808	0.3741	0.3673	0.3607	0.3539	0.3472	0.3408
56-07	0.3908	0.3838	0.3770	0.3702	0.3635	0.3567	0.3499	0.3434
56-08	0.3939	0.3867	0.3800	0.3731	0.3663	0.3594	0.3526	0.3461
56-09	0.3969	0.3897	0.3829	0.3759	0.3691	0.3622	0.3553	0.3487
56-10	0.3999	0.3927	0.3858	0.3788	0.3719	0.3649	0.3580	0.3514
56-11	0.4029	0.3956	0.3887	0.3817	0.3747	0.3677	0.3607	0.3541
57-00	0.4059	0.3986	0.3916	0.3845	0.3775	0.3704	0.3634	0.3567
57-01	0.4093	0.4019	0.3948	0.3877	0.3806	0.3735	0.3664	0.3596
57-02	0.4127	0.4052	0.3981	0.3909	0.3838	0.3766	0.3694	0.3626
57-03	0.4160	0.4085	0.4013	0.3941	0.3869	0.3797	0.3724	0.3656
57-04	0.4194	0.4118	0.4046	0.3973	0.3900	0.3828	0.3755	0.3685
57-05	0.4228	0.4151	0.4078	0.4005	0.3932	0.3858	0.3785	0.3715
57-06	0.4261	0.4184	0.4110	0.4036	0.3963	0.3889	0.3815	0.3744
57-07	0.4295	0.4217	0.4143	0.4068	0.3994	0.3919	0.3845	0.3774
57-08	0.4329	0.4250	0.4176	0.4100	0.4025	0.3950	0.3875	0.3804
57-09	0.4362	0.4283	0.4208	0.4132	0.4057	0.3981	0.3905	0.3833
57-10	0.4396	0.4316	0.4240	0.4164	0.4088	0.4011	0.3935	0.3863
57-11	0.4430	0.4350	0.4273	0.4196	0.4119	0.4042	0.3966	0.3892
58-00	0.4463	0.4382	0.4305	0.4228	0.4150	0.4073	0.3996	0.3922
58-01	0.4501	0.4419	0.4342	0.4263	0.4185	0.4107	0.4029	0.3955
58-02	0.4539	0.4456	0.4378	0.4299	0.4221	0.4142	0.4063	0.3988
58-03	0.4576	0.4493	0.4414	0.4335	0.4255	0.4176	0.4096	0.4021
58-04	0.4614	0.4530	0.4450	0.4370	0.4290	0.4211	0.4130	0.4054
58-05	0.4651	0.4567	0.4486	0.4406	0.4325	0.4245	0.4164	0.4087
58-06	0.4689	0.4604	0.4523	0.4441	0.4360	0.4279	0.4197	0.4120
58-07	0.4726	0.4641	0.4559	0.4477	0.4395	0.4313	0.4231	0.4153
58-08	0.4764	0.4678	0.4596	0.4513	0.4430	0.4348	0.4265	0.4186
58-09	0.4802	0.4715	0.4632	0.4548	0.4465	0.4382	0.4298	0.4219
58-10	0.4839	0.4752	0.4668	0.4584	0.4500	0.4416	0.4332	0.4252
58-11	0.4877	0.4789	0.4705	0.4620	0.4535	0.4451	0.4366	0.4285
59-00	0.4914	0.4826	0.4741	0.4655	0.4570	0.4485	0.4399	0.4318
59-01	0.4956	0.4867	0.4781	0.4695	0.4609	0.4523	0.4437	0.4355
59-02	0.4998	0.4908	0.4822	0.4735	0.4648	0.4562	0.4475	0.4392
59-03	0.5040	0.4949	0.4862	0.4775	0.4687	0.4600	0.4512	0.4429
59-04	0.5083	0.4990	0.4903	0.4814	0.4726	0.4638	0.4550	0.4466
59-05	0.5124	0.5032	0.4943	0.4854	0.4766	0.4677	0.4588	0.4503
59-06	0.5166	0.5073	0.4983	0.4894	0.4804	0.4715	0.4625	0.4540
59-07	0.5208	0.5114	0.5024	0.4933	0.4843	0.4753	0.4663	0.4577
59-08	0.5250	0.5156	0.5065	0.4973	0.4883	0.4792	0.4700	0.4614
59-09	0.5292	0.5197	0.5105	0.5013	0.4922	0.4830	0.4738	0.4651
59-10	0.5334	0.5238	0.5146	0.5053	0.4960	0.4868	0.4775	0.4687
59-11	0.5376	0.5279	0.5186	0.5093	0.5000	0.4907	0.4813	0.4725
60-00	0.5418	0.5320	0.5227	0.5133	0.5039	0.4945	0.4851	0.4761
60-01	0.5465	0.5366	0.5272	0.5177	0.5082	0.4988	0.4893	0.4803
60-02	0.5513	0.5413	0.5318	0.5222	0.5127	0.5031	0.4935	0.4844
60-03	0.5559	0.5459	0.5363	0.5267	0.5170	0.5074	0.4977	0.4885
60-04	0.5607	0.5505	0.5408	0.5311	0.5214	0.5117	0.5020	0.4927
60-05	0.5654	0.5552	0.5454	0.5355	0.5258	0.5160	0.5062	0.4968
60-06	0.5701	0.5598	0.5499	0.5400	0.5302	0.5203	0.5104	0.5010
60-07	0.5748	0.5644	0.5544	0.5444	0.5345	0.5245	0.5146	0.5051
60-08	0.5795	0.5691	0.5591	0.5489	0.5389	0.5289	0.5188	0.5093
60-09	0.5842	0.5737	0.5636	0.5534	0.5433	0.5332	0.5230	0.5134
60-10	0.5889	0.5783	0.5681	0.5579	0.5477	0.5374	0.5272	0.5175
60-11	0.5937	0.5829	0.5727	0.5624	0.5521	0.5418	0.5315	0.5217
61-00	0.5983	0.5875	0.5772	0.5668	0.5564	0.5460	0.5357	0.5258
61-01	0.6036	0.5927	0.5823	0.5718	0.5613	0.5509	0.5404	0.5304

Partial Lump-Sum Option Payment Factors

Age	Months											
Years	0	1	2	3	4	5	6	7	8	9	10	11
49	196.7787	196.5437	196.3088	196.0738	195.8388	195.6039	195.3689	195.1339	194.8989	194.6640	194.4290	194.1940
50	193.9591	193.7177	193.4763	193.2349	192.9935	192.7521	192.5107	192.2693	192.0279	191.7865	191.5451	191.3038
51	191.0624	190.8143	190.5663	190.3182	190.0702	189.8221	189.5741	189.3260	189.0780	188.8299	188.5819	188.3338
52	188.0858	187.8308	187.5758	187.3208	187.0659	186.8109	186.5559	186.3010	186.0460	185.7910	185.5360	185.2811
53	185.0261	184.7639	184.5018	184.2396	183.9775	183.7153	183.4532	183.1910	182.9289	182.6667	182.4046	182.1424
54	181.8803	181.6108	181.3413	181.0718	180.8023	180.5328	180.2633	179.9938	179.7243	179.4548	179.1853	178.9159
55	178.6464	178.3693	178.0922	177.8151	177.5380	177.2609	176.9839	176.7068	176.4297	176.1526	175.8755	175.5985
56	175.3214	175.0365	174.7517	174.4669	174.1821	173.8972	173.6124	173.3276	173.0427	172.7579	172.4731	172.1882
57	171.9034	171.6108	171.3181	171.0254	170.7328	170.4401	170.1474	169.8548	169.5621	169.2695	168.9768	168.6841
58	168.3915	168.0911	167.7906	167.4902	167.1898	166.8894	166.5890	166.2886	165.9882	165.6878	165.3874	165.0869
59	164.7865	164.4786	164.1706	163.8627	163.5547	163.2467	162.9388	162.6308	162.3229	162.0149	161.7070	161.3990
60	161.0910	160.7759	160.4607	160.1455	159.8303	159.5151	159.1999	158.8847	158.5695	158.2544	157.9392	157.6240
61	157.3088	156.9868	156.6648	156.3427	156.0207	155.6987	155.3767	155.0547	154.7326	154.4106	154.0886	153.7666
62	153.4446	153.1163	152.7880	152.4597	152.1315	151.8032	151.4749	151.1466	150.8184	150.4901	150.1618	149.8335
63	149.5053	149.1714	148.8375	148.5036	148.1698	147.8359	147.5020	147.1681	146.8342	146.5004	146.1665	145.8326
64	145.4987	145.1601	144.8214	144.4827	144.1440	143.8054	143.4667	143.1280	142.7893	142.4507	142.1120	141.7733
65	141.4346	141.0920	140.7494	140.4068	140.0642	139.7216	139.3790	139.0364	138.6938	138.3512	138.0086	137.6660
66	137.3233	136.9777	136.6321	136.2865	135.9409	135.5952	135.2496	134.9040	134.5584	134.2127	133.8671	133.5215
67	133.1759	132.8281	132.4803	132.1325	131.7846	131.4368	131.0890	130.7412	130.3934	130.0456	129.6978	129.3500
68	129.0022	128.6530	128.3038	127.9546	127.6053	127.2561	126.9069	126.5577	126.2084	125.8592	125.5100	125.1608
69	124.8115	124.4615	124.1115	123.7614	123.4114	123.0613	122.7113	122.3612	122.0112	121.6611	121.3111	120.9610
70	120.6110	120.2606	119.9103	119.5599	119.2095	118.8592	118.5088	118.1585	117.8081	117.4577	117.1074	116.7570
71	116.4067	116.0564	115.7061	115.3559	115.0056	114.6554	114.3051	113.9549	113.6046	113.2544	112.9041	112.5539
72	112.2036	111.8542	111.5047	111.1553	110.8058	110.4564	110.1070	109.7575	109.4081	109.0586	108.7092	108.3597
73	108.0103	107.6626	107.3149	106.9673	106.6196	106.2720	105.9243	105.5766	105.2290	104.8813	104.5336	104.1860
74	103.8383	103.4936	103.1489	102.8043	102.4596	102.1149	101.7702	101.4255	101.0809	100.7362	100.3915	100.0468
75	99.7022	99.3619	99.0216	98.6814	98.3411	98.0009	97.6606	97.3203	96.9801	96.6398	96.2995	95.9593
76	95.6190	95.2847	94.9504	94.6160	94.2817	93.9474	93.6130	93.2787	92.9444	92.6100	92.2757	91.9414
77	91.6071	91.2799	90.9528	90.6257	90.2986	89.9715	89.6444	89.3172	88.9901	88.6630	88.3359	88.0088
78	87.6817	87.3627	87.0438	86.7248	86.4059	86.0869	85.7680	85.4490	85.1301	84.8111	84.4922	84.1732
79	83.8543	83.5442	83.2341	82.9240	82.6139	82.3038	81.9936	81.6835	81.3734	81.0633	80.7532	80.4431
80	80.1330	79.8321	79.5312	79.2303	78.9295	78.6286	78.3277	78.0268	77.7260	77.4251	77.1242	76.8233
81	76.5225	76.2310	75.9395	75.6480	75.3565	75.0649	74.7734	74.4819	74.1904	73.8989	73.6074	73.3159
82	73.0244	72.7422	72.4599	72.1776	71.8953	71.6131	71.3308	71.0485	70.7663	70.4840	70.2017	69.9195
83	69.6372	69.3637	69.0902	68.8168	68.5433	68.2699	67.9964	67.7229	67.4495	67.1760	66.9025	66.6291
84	66.3556	66.0902	65.8248	65.5594	65.2940	65.0286	64.7633	64.4979	64.2325	63.9671	63.7017	63.4363
85	63.1709	62.9126	62.6542	62.3959	62.1375	61.8792	61.6208	61.3624	61.1041	60.8457	60.5874	60.3290
86	60.0707	59.8193	59.5680	59.3167	59.0653	58.8140	58.5626	58.3113	58.0600	57.8086	57.5573	57.3059
87	57.0546	56.8098	56.5649	56.3201	56.0753	55.8304	55.5856	55.3408	55.0959	54.8511	54.6063	54.3614
88	54.1166	53.8781	53.6397	53.4012	53.1627	52.9242	52.6858	52.4473	52.2088	51.9704	51.7319	51.4934
89	51.2549	51.0240	50.7932	50.5623	50.3314	50.1005	49.8696	49.6387	49.4078	49.1769	48.9460	48.7151