Illustrative Service Table

x	$l_x^{(\tau)}$	$d_x^{(d)}$	$d_x^{(w)}$	$d_x^{(i)}$	$d_x^{(t)}$
30	100,000	100	19,990	0	0
31	79,910	80	14,376	0	0
32	65,454	72	9,858	0	0
33	55,524	61	5,702	0	0
34	49,761	60	3,971	0	0
35	45,730	64	2,693	46	0
36	42,927	64	1,927	43	0
37	40,893	65	1,431	45	0
38	39,352	71	1,181	47	0
39	38,053	72	989	49	0
40	36,943	78	813	52	0
41	36,000	83	720	54	0
42	35,143	91	633	56	0
43	34,363	96	550	58	0
44	33,659	104	505	61	0
45	32,989	112	462	66	0
46	32,349	123	421	71	0
47	31,734	133	413	79	0
48	31,109	143	373	87	0
49	30,506	156	336	95	0
50	29,919	168	299	102	0
51	29,350	182	293	112	0
52	28,763	198	259	121	0
53	28,185	209	251	132	0
54	27,593	226	218	143	0
55	27,006	240	213	157	0
56	26,396	259	182	169	0
57	25,786	276	178	183	0
58	25,149	297	148	199	0
59	24,505	316	120	213	0
60	23,856	313	0	0	3,552
61	19,991	298	0	0	1,587
62	18,106	284	0	0	2,692
63	15,130	271	0	0	1,350
64	13,509	257	0	0	2,006
65	11,246	204	0	0	4,448
66	6,594	147	0	0	1,302
67	5,145	119	0	0	1,522
68	3,504	83	0	0	1,381
69	2,040	49	0	0	1,004
70	987	17	0	0	970

Interest Functions

Interest Functions at $i = 0.06$

m	$i^{(m)}$	$d^{(m)}$	$i/i^{(m)}$	$d/d^{(m)}$	$\alpha(m)$	$\beta(m)$
1	0.06000	0.05660	1.00000	1.00000	1.00000	0.00000
2	0.05913	0.05743	1.01478	0.98564	1.00021	0.25739
4	0.05870	0.05785	1.02223	0.97852	1.00027	0.38424
12	0.05841	0.05813	1.02721	0.97378	1.00028	0.46812
∞	0.05827	0.05827	1.02971	0.97142	1.00028	0.50985

where $\alpha(m) = \dfrac{id}{i^{(m)} d^{(m)}}$ and

$$\beta(m) = \frac{i - i^{(m)}}{i^{(m)} d^{(m)}}$$

Special Notes:

1. Unless specified, the force of interest is constant in each question.
2. Unless specified, future lifetimes are independent in each question.
3. Unless specified, all lives in a question follow the same mortality table.

Illustrative Life Table: Basic Functions and Single Benefit Premiums at $i = 0.06$

Lives are independent.

x	$\ddot{a}_{xx}$	$1000A_{xx}$	$1000({}^2A_{xx})$	$\ddot{a}_{x:x+10}$	$1000A_{x:x+10}$	$1000({}^2A_{x:x+10})$	x
66	7.5866	570.57	364.09	5.9802	661.50	468.44	66
67	7.3187	585.74	380.58	5.7283	675.76	486.02	67
68	7.0520	600.83	397.35	5.4809	689.76	503.62	68
69	6.7872	615.82	414.36	5.2385	703.48	521.21	69
70	6.5247	630.68	431.58	5.0014	716.90	538.72	70
71	6.2650	645.37	448.96	4.7701	730.00	556.11	71
72	6.0088	659.88	466.46	4.5450	742.74	573.34	72
73	5.7565	674.16	484.03	4.3263	755.11	590.36	73
74	5.5086	688.19	501.64	4.1146	767.10	607.12	74
75	5.2655	701.95	519.23	3.9099	778.69	623.59	75
76	5.0278	715.41	536.75	3.7125	789.86	639.71	76
77	4.7959	728.54	554.16	3.5227	800.60	655.46	77
78	4.5700	741.32	571.41	3.3406	810.91	670.79	78
79	4.3507	753.74	588.45	3.1663	820.78	685.67	79
80	4.1381	765.77	605.25	2.9998	830.20	700.08	80
81	3.9326	777.40	621.75	2.8412	839.18	713.99	81
82	3.7344	788.62	637.91	2.6905	847.71	727.37	82
83	3.5438	799.41	653.70	2.5476	855.80	740.21	83
84	3.3607	809.77	669.08	2.4125	863.44	752.49	84
85	3.1855	819.69	684.02	2.2851	870.66	764.20	85
86	3.0181	829.16	698.48	2.1652	877.44	775.34	86
87	2.8587	838.19	712.45	2.0527	883.81	785.89	87
88	2.7071	846.77	725.89	1.9475	889.77	795.86	88
89	2.5633	854.91	738.79	1.8493	895.33	805.25	89
90	2.4274	862.60	751.14	1.7579	900.50	814.05	90
91	2.2991	869.86	762.91	1.6731	905.30	822.29	91
92	2.1784	876.70	774.11	1.5947	909.73	829.96	92
93	2.0651	883.11	784.73	1.5225	913.82	837.07	93
94	1.9590	889.11	794.77	1.4563	917.57	843.64	94
95	1.8600	894.72	804.22	1.3957	921.00	849.67	95
96	1.7678	899.93	813.09	1.3407	924.11	855.20	96
97	1.6823	904.77	821.39	1.2908	926.93	860.21	97
98	1.6032	909.25	829.12	1.2460	929.47	864.75	98
99	1.5304	913.38	836.29	1.2060	931.73	868.81	99
100	1.4634	917.16	842.92	1.1706	933.74	872.43	100
101	1.4023	920.63	849.02	1.1395	935.50	875.61	101
102	1.3466	923.78	854.60	1.1124	937.03	878.39	102
103	1.2962	926.63	859.67	1.0892	938.35	880.78	103
104	1.2509	929.20	864.26	1.0695	939.46	882.81	104
105	1.2103	931.49	868.38	1.0531	940.39	884.50	105
106	1.1744	933.53	872.04	1.0397	941.15	885.89	106
107	1.1428	935.32	875.27	1.0289	941.76	887.00	107
108	1.1153	936.87	878.10	1.0205	942.24	887.87	108
109	1.0916	938.21	880.53	1.0141	942.60	888.54	109
110	1.0715	939.35	882.60	1.0093	942.87	889.03	110