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JOINT-LIFE IMMEDIATE ANNUITIES BASED ON THE UNITED STATES LIFE TABLES FOR WHITE PERSONS, 1959-61

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About ten years ago the Division of the Actuary, Social Security Administration calculated, in connection with the United States 1949-51 decennial life tables, a series of joint-life annuity values. Interest rates of 0%, 2%, 2½%, and 3% were used, and values of D, N, and A for equal ages of white males and white females were computed. At that time, an approximation method was also devised for cases of unequal ages, although exact values were calculated for some unequal ages. Over the years, we have had many requests for these tables from consulting actuaries, insurance companies' actuaries, and from government actuaries. We hope that the tables we are publishing in this note will be of similar value.

The present tables were calculated in connection with the 1959-61 United States decennial life tables program, which is a joint venture of the Division of Health Records Statistics, National Center for Health Statistics, U.S. Public Health Service, and the Division of the Actuary, Social Security Administration. The calculations were done on the Center's computers using a program especially prepared for us by Mrs. Florence K. Koons, of the Center.

The tables were computed for the joint-life status of a white male and a white female under the assumption that each life followed independently the mortality observed in the United States during

the period 1959-61 among persons of their own race and sex. This assumption of independence of the mortality rates may not be realistic in many practical cases, but since usually the degree of dependency is impossible of determination, the calculated tables, therefore, should offer at least a reasonable approximation to the value desired.

In the case of husband-wife joint-life status, it should be observed that in addition to the possible interrelationship of their state of health, there is also the fact that married persons have lower mortality than the general population. For these reasons the calculated annuities should be regarded as possible minimum values for the present value of the annuity for a married couple.

Tables are presented here at interest rates of 2½% to 5%, by increments of ½%, but also included is a table at 0% interest, whose values represent joint-life curtate expectations of life. The male life is tabulated by single years from age 25 to 75, while the female age is taken at 2 year intervals from 16 years younger than the male life to 8 years older.

We have found that a third degree polynomial interpolation will provide good accuracy for differences in ages within the tabulated range. For example, for differences of -13, -11, -9, ...3, and 5 years the following formula could be used in the case of a male aged x and a female aged y :

$$a_{xy} = -.0625a_{x:y-3} + .5625a_{x:y-1} + .5625a_{x:y+1} - .0625a_{x:y+3}$$

Deferred annuities can be calculated using the following formula:

$$n|a_{xy} = \frac{1}{(1+i)^n} \cdot \frac{1_{x+n}}{l_x} \cdot \frac{1_{y+n}}{l_y} \cdot a_{x+n:y+n}$$

where i is the annual rate of interest and the l 's are those in table 8.

TABLE I
 JOINT-LIFE IMMEDIATE ANNUITIES
 UNITED STATES WHITE PERSONS: 1959-61 - AT 0% INTEREST RATE

Age of Male	Female older than male by												
	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8
25	43.6783	43.4438	43.1658	42.8439	42.4752	42.0515	41.5618	40.9996	40.3589	39.6353	38.8267	37.9337	36.9576
26	42.7598	42.5237	42.2470	41.9286	41.5632	41.1403	40.6510	40.0890	39.4484	38.7252	37.9182	37.0274	36.0541
27	41.8356	41.5994	41.3253	41.0106	40.6474	40.2249	39.7360	39.1742	38.5339	37.8118	37.0068	36.1188	35.1487
28	40.9078	40.6729	40.4022	40.0909	39.7287	39.3066	38.8181	38.2566	37.6170	36.8965	36.0940	35.2090	34.2426
29	39.9791	39.7467	39.4798	39.1706	38.8088	38.3873	37.8992	37.3381	36.6996	35.9814	35.1817	34.3000	33.3378
30	39.0517	38.8227	38.5590	38.2508	37.8895	37.4685	36.9807	36.4204	35.7837	35.0679	34.2713	33.3933	32.4360
31	38.1267	37.9013	37.6398	37.3320	36.9714	36.5507	36.0634	35.5043	34.8698	34.1569	33.3635	32.4897	31.5381
32	37.2046	36.9824	36.7218	36.4146	36.0545	35.6342	35.1477	34.5903	33.9583	33.2484	32.4587	31.5898	30.6443
33	36.2858	36.0656	35.8055	35.4989	35.1392	34.7194	34.2341	33.6789	33.0496	32.3430	31.5575	30.6940	29.7554
34	35.3701	35.1509	34.8913	34.5853	34.2259	33.8070	33.3234	32.7706	32.1443	31.4412	30.6605	29.8031	28.8718
35	34.4574	34.2386	33.9797	33.6741	33.3152	32.8975	32.4160	31.8659	31.2428	30.5438	29.7684	28.9177	27.9941
36	33.5479	33.3297	33.0713	32.7661	32.4080	31.9919	31.5128	30.9656	30.3459	29.6515	28.8820	28.0384	27.1231
37	32.6424	32.4249	32.1668	31.8621	31.5052	31.0911	30.6146	30.0704	29.4547	28.7654	28.0023	27.1662	26.2595
38	31.7419	31.5248	31.2671	30.9632	30.6078	30.1960	29.7222	29.1813	28.5700	27.8854	27.1301	26.3019	25.4042
39	30.8471	30.6303	30.3731	30.0702	29.7168	29.3074	28.8364	28.2993	27.6928	27.0153	26.2662	25.4463	24.5577
40	29.9587	29.7423	29.4857	29.1843	28.8329	28.4261	27.9582	27.4252	26.8241	26.1531	25.4115	24.6001	23.7209
41	29.0774	28.8614	28.6059	28.3061	27.9571	27.5529	27.0885	26.5600	25.9647	25.3005	24.5667	23.7640	22.8944
42	28.2040	27.9886	27.7343	27.4366	27.0898	26.6885	26.2280	25.7045	25.1153	24.4581	23.7324	22.9386	22.0788
43	27.3390	27.1245	26.8718	26.5761	26.2318	25.8337	25.3774	24.8594	24.2764	23.6266	22.9091	22.1243	21.2749
44	26.4831	26.2698	26.0189	25.7254	25.3837	24.9891	24.5375	24.0251	23.4488	22.8065	22.0973	21.3218	20.4829
45	25.6371	25.4252	25.1762	24.8849	24.5462	24.1555	23.7089	23.2023	22.6329	21.9982	21.2975	20.5316	19.7025
46	24.8013	24.5910	24.3439	24.0550	23.7195	23.3332	22.8917	22.3913	21.8289	21.2020	20.5099	19.7539	18.9327
47	23.9763	23.7677	23.5227	23.2364	22.9046	22.5228	22.0868	21.5928	21.0374	20.4184	19.7353	18.9884	18.1734
48	23.1638	22.9569	22.7141	22.4307	22.1028	21.7258	21.2955	20.8079	20.2596	19.6486	18.9747	18.2350	17.4254
49	22.3653	22.1602	21.9197	21.6397	21.3159	20.9438	20.5193	20.0382	19.4971	18.8943	18.2287	17.4946	16.6908

TABLE 1 (continued)
 JOINT-LIFE IMMEDIATE ANNUITIES
 UNITED STATES WHITE PERSONS: 1959-61 - AT 0% INTEREST RATE

Age of Male	Female older than male by																
	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14	
50	21.5820	21.3788	21.1409	20.8644	20.5449	20.1779	19.7592	19.2846	18.7508	18.1564	17.4972	16.7676	15.9714				
51	20.8146	20.6135	20.3785	20.1056	19.7906	19.4289	19.0160	18.5479	18.0215	17.4345	16.7800	16.0554	15.2694				
52	20.0629	19.8641	19.6322	19.3632	19.0527	18.6962	18.2892	17.8276	17.3088	16.7274	16.0768	15.3587	14.5856				
53	19.3257	19.1295	18.9009	18.6359	18.3302	17.9790	17.5778	17.1229	16.6108	16.0335	15.3870	14.6781	13.9194				
54	18.6016	18.4082	18.1831	17.9223	17.6213	17.2754	16.8802	16.4322	15.9252	15.3512	14.7105	14.0134	13.2692				
55	17.8895	17.6991	17.4777	17.2212	16.9251	16.5847	16.1957	15.7539	15.2505	14.6801	14.0478	13.3641	12.6339				
56	17.1889	17.0017	16.7842	16.5321	16.2410	15.9060	15.5235	15.0864	14.5859	14.0208	13.3994	12.7292	12.0122				
57	16.5005	16.3167	16.1032	15.8556	15.5695	15.2404	14.8636	14.4298	13.9325	13.3751	12.7661	12.1090	11.4042				
58	15.8262	15.6459	15.4364	15.1934	14.9124	14.5892	14.2167	13.7854	13.2928	12.7454	12.1489	11.5039	10.8107				
59	15.1683	14.9917	14.7863	14.5479	14.2721	13.9541	13.5844	13.1558	12.6701	12.1340	11.5494	10.9154	10.2335				
60	14.5287	14.3557	14.1543	13.9204	13.6500	13.3357	12.9680	12.5434	12.0666	11.5417	10.9680	10.3441	9.6743				
61	13.9074	13.7380	13.5407	13.3115	13.0457	12.7338	12.3682	11.9495	11.4828	10.9685	10.4043	9.7905	9.1341				
62	13.3038	13.1380	12.9448	12.7203	12.4577	12.1474	11.7851	11.3743	10.9176	10.4128	9.8576	9.2543	8.6127				
63	12.7170	12.5549	12.3658	12.1455	11.8849	11.5762	11.2191	10.8173	10.3700	9.8738	9.3272	8.7359	8.1092				
64	12.1461	11.9876	11.8029	11.5854	11.3261	11.0201	10.6701	10.2773	9.8386	9.3502	8.8130	8.2350	7.6222				
65	11.5901	11.4354	11.2545	11.0388	10.7808	10.4795	10.1375	9.7533	9.3222	8.8415	8.3150	7.7504	7.1517				
66	11.0488	10.8981	10.7197	10.5051	10.2495	9.9546	9.6209	9.2444	8.8203	8.3480	7.8335	7.2814	6.6986				
67	10.5221	10.3748	10.1980	9.9845	9.7331	9.4455	9.1196	8.7501	8.3328	7.8701	7.3677	6.8284	6.2633				
68	10.0094	9.8645	9.6886	9.4773	9.2316	8.9516	8.6328	8.2695	7.8598	7.4079	6.9169	6.3920	5.8440				
69	9.5098	9.3662	9.1914	8.9838	8.7449	8.4720	8.1594	7.8023	7.4013	6.9604	6.4810	5.9722	5.4396				
70	9.0220	8.8793	8.7064	8.5041	8.2721	8.0056	7.6988	7.3485	6.9574	6.5268	6.0605	5.5675	5.0507				
71	8.5453	8.4036	8.2340	8.0378	7.8124	7.5517	7.2505	6.9081	6.5271	6.1071	5.6555	5.1766	4.6790				
72	8.0792	7.9392	7.7745	7.5846	7.3651	7.1097	6.8147	6.4814	6.1097	5.7017	5.2647	4.8002	4.3257				
73	7.6244	7.4874	7.3283	7.1444	6.9302	6.6799	6.3921	6.0680	5.7059	5.3114	4.8872	4.4403	3.9935				
74	7.1820	7.0494	6.8960	6.7175	6.5080	6.2633	5.9837	5.6680	5.3168	4.9355	4.5243	4.0986	3.6835				
75	6.7535	6.6258	6.4777	6.3040	6.0990	5.8608	5.5894	5.2823	4.9433	4.5733	4.1781	3.7780	3.3921				

TABLE 2
JOINT-LIFE IMMEDIATE ANNUITIES
UNITED STATES WHITE PERSONS: 1959-61 - AT 2 1/2% INTEREST RATE

Age of Male	Female older than male by																	
	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14	16	
25	25.5432	25.4644	25.3698	25.2605	25.1360	24.9927	24.8250	24.6295	24.4027	24.1414	23.8431	23.5061	23.1289					
26	25.2305	25.1490	25.0530	24.9432	24.8178	24.6716	24.5002	24.3003	24.0682	23.8011	23.4967	23.1533	22.7690					
27	24.9072	24.8236	24.7269	24.6168	24.4898	24.3404	24.1652	23.9607	23.7234	23.4506	23.1404	22.7906	22.3994					
28	24.5739	24.4892	24.3923	24.2816	24.1522	23.9996	23.8205	23.6114	23.3689	23.0908	22.7748	22.4188	22.0208					
29	24.2322	24.1469	24.0501	23.9381	23.8059	23.6501	23.4670	23.2532	23.0058	22.7225	22.4009	22.0386	21.6341					
30	23.8831	23.7979	23.7008	23.5868	23.4518	23.2926	23.1054	22.8871	22.6349	22.3466	22.0194	21.6510	21.2402					
31	23.5272	23.4423	23.3442	23.2278	23.0900	22.9273	22.7361	22.5133	22.2566	21.9633	21.6306	21.2564	20.8397					
32	23.1646	23.0797	22.9799	22.8612	22.7205	22.5541	22.3589	22.1321	21.8709	21.5727	21.2346	20.8549	20.4327					
33	22.7955	22.7100	22.6081	22.4870	22.3432	22.1733	21.9743	21.7435	21.4780	21.1749	20.8317	20.4468	20.0195					
34	22.4197	22.3327	22.2289	22.1052	21.9583	21.7849	21.5823	21.3477	21.0780	20.7702	20.4222	20.0325	19.6002					
35	22.0369	21.9482	21.8423	21.7160	21.5660	21.3894	21.1834	20.9451	20.6712	20.3590	20.0064	19.6122	19.1753					
36	21.6472	21.5568	21.4487	21.3197	21.1667	20.9870	20.7778	20.5358	20.2579	19.9415	19.5849	19.1865	18.7453					
37	21.2509	21.1588	21.0484	20.9168	20.7610	20.5784	20.3660	20.1205	19.8388	19.5186	19.1581	18.7558	18.3105					
38	20.8465	20.7546	20.6419	20.5077	20.3493	20.1640	19.9485	19.6996	19.4143	19.0907	18.7267	18.3207	17.8717					
39	20.4406	20.3447	20.2297	20.0931	19.9323	19.7443	19.5259	19.2737	18.9853	18.6584	18.2911	17.8818	17.4292					
40	20.0274	19.9295	19.8123	19.6735	19.5104	19.3199	19.0986	18.8434	18.5522	18.2224	17.8521	17.4396	16.9836					
41	19.6094	19.5095	19.3904	19.2495	19.0843	18.8912	18.6672	18.4095	18.1156	17.7832	17.4102	16.9947	16.5356					
42	19.1871	19.0854	18.9644	18.8217	18.6543	18.4588	18.2324	17.9724	17.6762	17.3414	16.9658	16.5475	16.0854					
43	18.7610	18.6575	18.5348	18.3904	18.2209	18.0233	17.7947	17.5327	17.2344	16.8974	16.5194	16.0986	15.6340					
44	18.3314	18.2264	18.1022	17.9560	17.7845	17.5850	17.3546	17.0908	16.7906	16.4517	16.0715	15.6483	15.1815					
45	17.8989	17.7926	17.6669	17.5190	17.3458	17.1446	16.9127	16.6473	16.3455	16.0047	15.6225	15.1974	14.7279					
46	17.4639	17.3563	17.2292	17.0797	16.9050	16.7025	16.4693	16.2025	15.8993	15.5568	15.1728	14.7440	14.2725					
47	17.0268	16.9181	16.7897	16.6388	16.4628	16.2592	16.0248	15.7569	15.4524	15.1085	14.7230	14.2940	13.8153					
48	16.5889	16.4791	16.3494	16.1974	16.0204	15.8159	15.5806	15.3117	15.0060	14.6638	14.2742	13.8417	13.3571					
49	16.1516	16.0406	15.9099	15.7569	15.5792	15.3739	15.1380	14.8682	14.5615	14.2152	13.8269	13.3897	12.8994					

TABLE 2 (continued)
 JOINT-LIFE IMMEDIATE ANNUITIES
 UNITED STATES WHITE PERSONS: 1959-61 - AT 2 1/2% INTEREST RATE

Age of Male	Female older than male by															
	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8			
50	15.7158	15.6038	15.4722	15.3186	15.1403	14.9344	14.6979	14.4274	14.1197	13.7727	13.3813	12.9386	12.4442			
51	15.2823	15.1695	15.0372	14.8831	14.7044	14.4982	14.2611	13.9899	13.6816	13.3333	12.9375	12.4897	11.9933			
52	14.8512	14.7377	14.6050	14.4506	14.2716	14.0651	13.8277	13.5559	13.2472	12.8962	12.4955	12.0438	11.5477			
53	14.4219	14.3080	14.1751	14.0205	13.8414	13.6347	13.3970	13.1250	12.8154	12.4635	12.0550	11.6016	11.1073			
54	13.9934	13.8794	13.7464	13.5918	13.4128	13.2061	12.9682	12.6962	12.3844	12.0251	11.6162	11.1633	10.6711			
55	13.5653	13.4512	13.3183	13.1640	12.9852	12.7785	12.5408	12.2683	11.9533	11.5898	11.1796	10.7287	10.2385			
56	13.1371	13.0232	12.8906	12.7367	12.5582	12.3518	12.1145	11.8404	11.5216	11.1552	10.7459	10.2974	9.8088			
57	12.7096	12.5961	12.4640	12.3106	12.1325	11.9267	11.6894	11.4127	11.0902	10.7230	10.3160	9.8697	9.3820			
58	12.2845	12.1715	12.0400	11.8872	11.7097	11.5047	11.2663	10.9863	10.6614	10.2954	9.8910	9.4464	8.9593			
59	11.8638	11.7515	11.6207	11.4686	11.2920	11.0873	10.8466	10.5635	10.2382	9.8745	9.4724	9.0289	8.5425			
60	11.4493	11.3377	11.2077	11.0563	10.8807	10.6752	10.4318	10.1466	9.8225	9.4615	9.0611	8.6181	8.1332			
61	11.0415	10.9307	10.8015	10.6512	10.4761	10.2687	10.0225	9.7370	9.4153	9.0566	8.6571	8.2147	7.7328			
62	10.6401	10.5302	10.4019	10.2527	10.0771	9.8673	9.6193	9.3352	9.0161	8.6591	8.2601	7.8190	7.3414			
63	10.2448	10.1359	10.0088	9.8603	9.6832	9.4710	9.2229	8.9412	8.6245	8.2685	7.8700	7.4315	6.9587			
64	9.8552	9.7474	9.6216	9.4729	9.2937	9.0801	8.8335	8.5546	8.2396	7.8842	7.4869	7.0525	6.5839			
65	9.4709	9.3643	9.2395	9.0896	8.9085	8.6950	8.4510	8.1745	7.8608	7.5059	7.1112	6.6812	6.2174			
66	9.0919	8.9867	8.8620	8.7104	8.5282	8.3165	8.0753	7.8008	7.4878	7.1342	6.7435	6.3175	5.8601			
67	8.7184	8.6144	8.4888	8.3357	8.1539	7.9448	7.7063	7.4331	7.1209	6.7699	6.3835	5.9619	5.5129			
68	8.3502	8.2465	8.1196	7.9658	7.7858	7.5798	7.3434	7.0713	6.7605	6.4134	6.0307	5.6153	5.1747			
69	7.9868	7.8826	7.7545	7.6013	7.4242	7.2209	6.9861	6.7150	6.4069	6.0640	5.6856	5.2781	4.8446			
70	7.6275	7.5223	7.3937	7.2425	7.0685	6.8676	6.6342	6.3647	6.0605	5.7214	5.3489	4.9494	4.5236			
71	7.2716	7.1655	7.0378	6.8895	6.7185	6.5194	6.2873	6.0207	5.7207	5.3858	5.0209	4.6281	4.2135			
72	6.9191	6.8128	6.6872	6.5422	6.3737	6.1762	5.9459	5.6833	5.3872	5.0580	4.7007	4.3153	3.9157			
73	6.5707	6.4653	6.3427	6.2007	6.0342	5.8383	5.6110	5.3526	5.0607	4.7388	4.3880	4.0130	3.6333			
74	6.2275	6.1243	6.0049	5.8654	5.7008	5.5069	5.2836	5.0290	4.7426	4.4280	4.0840	3.7232	3.3675			
75	5.8911	5.7908	5.6743	5.5370	5.3740	5.1831	4.9639	4.7134	4.4339	4.1253	3.7910	3.4488	3.1158			

TABLE 3
 JOINT-LIFE IMMEDIATE ANNUITIES
 UNITED STATES WHITE PERSONS: 1959-61 - AT 3% INTEREST RATE

Age of Male	Female older than male by												
	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8
25	23.3213	23.2569	23.1794	23.0898	22.9881	22.8710	22.7337	22.5732	22.3863	22.1701	21.9222	21.6412	21.3251
26	23.0658	22.9987	22.9197	22.8295	22.7268	22.6069	22.4659	22.3011	22.1090	21.8870	21.6331	21.3455	21.0222
27	22.7999	22.7309	22.6510	22.5605	22.4560	22.3330	22.1883	22.0189	21.8216	21.5940	21.3341	21.0401	20.7097
28	22.5244	22.4542	22.3740	22.2828	22.1759	22.0497	21.9012	21.7272	21.5247	21.2917	21.0260	20.7254	20.3880
29	22.2406	22.1697	22.0895	21.9969	21.8873	21.7578	21.6053	21.4266	21.2192	20.9808	20.7093	20.4023	20.0580
30	21.9494	21.8785	21.7978	21.7032	21.5908	21.4579	21.3014	21.1181	20.9058	20.6622	20.3849	20.0716	19.7206
31	21.6513	21.5805	21.4988	21.4017	21.2866	21.1502	20.9895	20.8018	20.5848	20.3361	20.0530	19.7334	19.3761
32	21.3464	21.2754	21.1920	21.0925	20.9744	20.8344	20.6697	20.4777	20.2561	20.0023	19.7135	19.3880	19.0247
33	21.0348	20.9630	20.8775	20.7756	20.6544	20.5108	20.3421	20.1461	19.9200	19.6610	19.3667	19.0356	18.6665
34	20.7161	20.6430	20.5554	20.4509	20.3266	20.1794	20.0070	19.8069	19.5763	19.3123	19.0128	18.6763	18.3017
35	20.3903	20.3153	20.2257	20.1186	19.9910	19.8404	19.6645	19.4605	19.2254	18.9566	18.6521	18.3106	17.9306
36	20.0572	19.9805	19.8886	19.7787	19.6481	19.4943	19.3149	19.1070	18.8675	18.5941	18.2850	17.9386	17.5536
37	19.7171	19.6386	19.5445	19.4318	19.2982	19.1414	18.9586	18.7468	18.5032	18.2255	17.9120	17.5610	17.1711
38	19.3705	19.2901	19.1936	19.0782	18.9419	18.7821	18.5960	18.3805	18.1329	17.8512	17.5336	17.1782	16.7837
39	19.0177	18.9353	18.8364	18.7185	18.5796	18.4170	18.2275	18.0084	17.7572	17.4718	17.1502	16.7906	16.3917
40	18.6591	18.5747	18.4734	18.3532	18.2118	18.0463	17.8537	17.6312	17.3766	17.0877	16.7624	16.3989	15.9956
41	18.2951	18.2085	18.1051	17.9827	17.8389	17.6706	17.4749	17.2494	16.9917	16.6995	16.3707	16.0034	15.5960
42	17.9259	17.8374	17.7320	17.6076	17.4613	17.2903	17.0919	16.8636	16.6030	16.3077	15.9756	15.6046	15.1932
43	17.5521	17.4618	17.3545	17.2280	17.0794	16.9059	16.7049	16.4741	16.2108	15.9126	15.5773	15.2029	14.7880
44	17.1740	17.0820	16.9730	16.8445	16.6937	16.5179	16.3146	16.0814	15.8156	15.5148	15.1765	14.7987	14.3806
45	16.7921	16.6985	16.5879	16.4575	16.3045	16.1267	15.9214	15.6861	15.4180	15.1146	14.7734	14.3927	13.9708
46	16.4066	16.3116	16.1993	16.0671	15.9123	15.7326	15.5256	15.2803	15.0181	14.7122	14.3683	13.9850	13.5580
47	16.0180	15.9217	15.8079	15.6739	15.5175	15.3363	15.1276	14.8886	14.6164	14.3083	13.9620	13.5755	13.1423
48	15.6276	15.5299	15.4145	15.2791	15.1214	14.9388	14.7286	14.4880	14.2139	13.9037	13.5554	13.1644	12.7243
49	15.2364	15.1375	15.0207	14.8840	14.7251	14.5414	14.3299	14.0878	13.8120	13.4999	13.1489	12.7523	12.3056

TABLE 3 (continued)
 JOINT-LIFE IMMEDIATE ANNUITIES
 UNITED STATES WHITE PERSONS: 1959-61 - AT 3% INTEREST RATE

Age of Male	Female older than male by																			
	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14	16	18		
50	14.8456	14.7454	14.6275	14.4898	14.3299	14.1450	13.9324	13.6889	13.4114	13.0977	12.7429	12.3399	11.8879							
51	14.4558	14.3545	14.2356	14.0971	13.9363	13.7505	13.5368	13.2920	13.0132	12.6973	12.3373	11.9282	11.4730							
52	14.0670	13.9648	13.8452	13.7060	13.5445	13.3580	13.1433	12.8972	12.6172	12.2980	11.9322	11.5181	11.0619							
53	13.6789	13.5760	13.4558	13.3160	13.1540	12.9668	12.7512	12.5042	12.2225	11.8987	11.5273	11.1104	10.6545							
54	13.2903	13.1870	13.0664	12.9262	12.7638	12.5760	12.3597	12.1120	11.8275	11.4985	11.1227	10.7052	10.2500							
55	12.9009	12.7972	12.6764	12.5361	12.3733	12.1852	11.9684	11.7196	11.4312	11.0972	10.7191	10.3022	9.8476							
56	12.5103	12.4065	12.2857	12.1453	11.9824	11.7939	11.5770	11.3260	11.0330	10.6953	10.3170	9.9012	9.4468							
57	12.1192	12.0155	11.8947	11.7544	11.5915	11.4031	11.1855	10.9313	10.6341	10.2946	9.9173	9.5025	9.0477							
58	11.7292	11.6256	11.5051	11.3650	11.2022	11.0140	10.7948	10.5367	10.2363	9.8970	9.5212	9.1068	8.6513							
59	11.3422	11.2390	11.1189	10.9790	10.8166	10.6282	10.4062	10.1444	9.8427	9.5047	9.1301	8.7155	8.2593							
60	10.9600	10.8573	10.7375	10.5980	10.4361	10.2464	10.0211	9.7565	9.4552	9.1188	8.7448	8.3296	7.8736							
61	10.5831	10.4808	10.3615	10.2226	10.0608	9.8688	9.6402	9.3746	9.0748	8.7397	8.3655	7.9497	7.4952							
62	10.2113	10.1095	9.9908	9.8526	9.6899	9.4950	9.2641	8.9991	8.7009	8.3665	7.9918	7.5761	7.1246							
63	9.8443	9.7432	9.6253	9.4875	9.3228	9.1251	8.8934	8.6300	8.3334	7.9990	7.6237	7.2094	6.7613							
64	9.4818	9.3814	9.2644	9.1260	8.9589	8.7593	8.5285	8.2670	7.9712	7.6365	7.2614	6.8500	6.4047							
65	9.1232	9.0239	8.9075	8.7676	8.5982	8.3981	8.1692	7.9094	7.6140	7.2789	6.9053	6.4971	6.0552							
66	8.7688	8.6706	8.5540	8.4121	8.2412	8.0422	7.8154	7.5569	7.2614	6.9268	6.5559	6.1505	5.7137							
67	8.4188	8.3214	8.2037	8.0599	7.8889	7.6921	7.4672	7.2093	6.9198	6.5808	6.2131	5.8109	5.3812							
68	8.0730	7.9756	7.8563	7.7114	7.5418	7.3473	7.1240	6.8664	6.5715	6.2414	5.8765	5.4792	5.0566							
69	7.7308	7.6327	7.5119	7.3672	7.1999	7.0077	6.7853	6.5281	6.2350	5.9081	5.5464	5.1559	4.7391							
70	7.3917	7.2924	7.1708	7.0277	6.8630	6.6725	6.4509	6.1946	5.9046	5.5805	5.2237	4.8399	4.4296							
71	7.0550	6.9546	6.8335	6.6929	6.5306	6.3415	6.1206	5.8663	5.5798	5.2590	4.9087	4.5304	4.1301							
72	6.7207	6.6198	6.5005	6.3626	6.2024	6.0143	5.7947	5.5437	5.2602	4.9442	4.6005	4.2285	3.8419							
73	6.3894	6.2892	6.1725	6.0372	5.8786	5.6916	5.4743	5.2269	4.9467	4.6371	4.2987	3.9362	3.5681							
74	6.0624	5.9641	5.8501	5.7171	5.5598	5.3743	5.1604	4.9160	4.6406	4.3374	4.0049	3.6553	3.3101							
75	5.7411	5.6453	5.5340	5.4027	5.2467	5.0637	4.8533	4.6123	4.3430	4.0448	3.7212	3.3890	3.0653							

TABLE 4
 JOINT-LIFE IMMEDIATE ANNUITIES
 UNITED STATES WHITE PERSONS: 1959-61 - AT 3 1/2% INTEREST RATE

Age of Male	Female older than male by												
	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8
25	21.3940	21.3410	21.2771	21.2033	21.1197	21.0235	20.9105	20.7781	20.6233	20.4436	20.2367	20.0012	19.7352
26	21.1840	21.1286	21.0632	20.9887	20.9041	20.8053	20.6888	20.5522	20.3924	20.2071	19.9943	19.7524	19.4733
27	20.9644	20.9070	20.8408	20.7659	20.6796	20.5778	20.4577	20.3167	20.1519	19.9611	19.7425	19.4941	19.2139
28	20.7356	20.6770	20.6104	20.5348	20.4462	20.3412	20.2175	20.0720	19.9022	19.7060	19.4816	19.2268	18.9395
29	20.4987	20.4395	20.3727	20.2957	20.2045	20.0964	19.9688	19.8188	19.6441	19.4427	19.2125	18.9512	18.6570
30	20.2547	20.1953	20.1280	20.0491	19.9551	19.8438	19.7122	19.5577	19.3781	19.1716	18.9355	18.6678	18.3668
31	20.0039	19.9445	19.8762	19.7949	19.6982	19.5834	19.4477	19.2888	19.1046	18.8929	18.6510	18.3770	18.0695
32	19.7463	19.6867	19.6167	19.5330	19.4334	19.3151	19.1754	19.0123	18.8235	18.6065	18.3589	18.0788	17.7649
33	19.4820	19.4216	19.3495	19.2635	19.1609	19.0389	18.8954	18.7281	18.5347	18.3125	18.0593	17.7733	17.4534
34	19.2107	19.1489	19.0748	18.9862	18.8804	18.7550	18.6077	18.4364	18.2384	18.0111	17.7524	17.4607	17.1349
35	18.9322	18.8686	18.7924	18.7012	18.5923	18.4634	18.3125	18.1372	17.9346	17.7023	17.4384	17.1413	16.8097
36	18.6463	18.5809	18.5026	18.4086	18.2966	18.1645	18.0101	17.8307	17.6236	17.3865	17.1176	16.8154	16.4782
37	18.3533	18.2862	18.2055	18.1087	17.9938	17.8585	17.7006	17.5172	17.3058	17.0641	16.7905	16.4832	16.1408
38	18.0535	17.9845	17.9014	17.8020	17.6842	17.5459	17.3845	17.1972	16.9816	16.7356	16.4575	16.1453	15.7977
39	17.7473	17.6763	17.5908	17.4888	17.3683	17.2270	17.0622	16.8711	16.6515	16.4015	16.1189	15.8022	15.4494
40	17.4349	17.3618	17.2739	17.1695	17.0464	16.9022	16.7339	16.5392	16.3160	16.0621	15.7754	15.4541	15.0954
41	17.1167	17.0415	16.9514	16.8446	16.7190	16.5718	16.4003	16.2023	15.9756	15.7179	15.4272	15.1015	14.7391
42	16.7929	16.7156	16.6235	16.5145	16.3864	16.2362	16.0617	15.8606	15.6306	15.3694	15.0749	14.7449	14.3778
43	16.4638	16.3847	16.2906	16.1795	16.0488	15.8959	15.7186	15.5146	15.2815	15.0169	14.7187	14.3846	14.0132
44	16.1299	16.0490	15.9530	15.8398	15.7067	15.5513	15.3714	15.1647	14.9286	14.6639	14.3590	14.0209	13.6455
45	15.7915	15.7090	15.6112	15.4959	15.3604	15.2027	15.0205	14.8112	14.5724	14.3015	13.9962	13.6544	13.2745
46	15.4489	15.3648	15.2653	15.1479	15.0103	14.8505	14.6661	14.4545	14.2131	13.9392	13.6305	13.2854	12.8976
47	15.1024	15.0169	14.9156	14.7963	14.6569	14.4952	14.3088	14.0950	13.8510	13.5744	13.2626	12.9136	12.5208
48	14.7532	14.6662	14.5632	14.4422	14.3012	14.1378	13.9495	13.7336	13.4873	13.2079	12.8933	12.5392	12.1398
49	14.4024	14.3139	14.2094	14.0869	13.9444	13.7794	13.5895	13.3716	13.1230	12.8411	12.5233	12.1627	11.7549

TABLE 4 (continued)
 JOINT-LIFE IMMEDIATE ANNUITIES
 UNITED STATES WHITE PERSONS: 1959-61 - AT 3 1/2% INTEREST RATE

Age of Male	Female older than male by																
	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14	
50	14.0509	13.9610	13.8551	13.7314	13.5875	13.4211	13.2296	13.0098	12.7590	12.4749	12.1525	11.7849	11.3709				
51	13.6995	13.6083	13.5012	13.3763	13.2313	13.0636	12.8705	12.6490	12.3962	12.1093	11.7811	11.4067	10.9895				
52	13.3481	13.2558	13.1477	13.0218	12.8757	12.7069	12.5124	12.2891	12.0346	11.7437	11.4091	11.0290	10.6086				
53	12.9963	12.9031	12.7942	12.6674	12.5205	12.3505	12.1547	11.9299	11.6732	11.3771	11.0363	10.6524	10.2312				
54	12.6431	12.5492	12.4396	12.3122	12.1645	11.9936	11.7965	11.5706	11.3104	11.0086	10.6627	10.2771	9.8554				
55	12.2882	12.1937	12.0836	11.9557	11.8073	11.6356	11.4376	11.2100	10.9454	10.6380	10.2889	9.9029	9.4837				
56	11.9311	11.8363	11.7259	11.5976	11.4486	11.2762	11.0775	10.8472	10.5776	10.2659	9.9156	9.5296	9.1064				
57	11.5725	11.4775	11.3669	11.2383	11.0890	10.9162	10.7164	10.4824	10.2080	9.8937	9.5435	9.1574	8.7326				
58	11.2140	11.1189	11.0082	10.8795	10.7299	10.5568	10.3549	10.1166	9.8385	9.5235	9.1737	8.7871	8.3634				
59	10.8574	10.7624	10.6517	10.5230	10.3733	10.1996	9.9946	9.7520	9.4719	9.1573	8.8078	8.4199	7.9915				
60	10.5044	10.4095	10.2990	10.1702	10.0207	9.8453	9.6365	9.3907	9.1102	8.7963	8.4464	8.0569	7.6275				
61	10.1554	10.0608	9.9504	9.8219	9.6721	9.4941	9.2816	9.0341	8.7542	8.4438	8.0899	7.6987	7.2696				
62	9.8104	9.7161	9.6060	9.4778	9.3268	9.1455	8.9302	8.6826	8.4037	8.0901	7.7377	7.3456	6.9183				
63	9.4692	9.3752	9.2656	9.1375	8.9842	8.7997	8.5832	8.3365	8.0583	7.7440	7.3901	6.9983	6.5732				
64	9.1313	9.0378	8.9288	8.7998	8.6438	8.4570	8.2407	7.9953	7.7172	7.4017	7.0472	6.6571	6.2336				
65	8.7964	8.7036	8.5950	8.4642	8.3055	8.1178	7.9028	7.6584	7.3799	7.0634	6.7093	6.3213	5.9031				
66	8.4646	8.3727	8.2635	8.1305	7.9700	7.7829	7.5693	7.3255	7.0463	6.7293	6.3771	5.9908	5.5735				
67	8.1361	8.0448	7.9343	7.7991	7.6381	7.4526	7.2404	6.9966	6.7167	6.4005	6.0504	5.6664	5.2548				
68	7.8109	7.7194	7.6071	7.4705	7.3104	7.1267	6.9155	6.6714	6.3914	6.0772	5.7289	5.3487	4.9431				
69	7.4884	7.3959	7.2819	7.1452	6.9869	6.8049	6.5941	6.3498	6.0709	5.7590	5.4130	5.0384	4.6375				
70	7.1680	7.0741	6.9591	6.8236	6.6674	6.4867	6.2761	6.0321	5.7554	5.4456	5.1035	4.7346	4.3390				
71	6.8491	6.7540	6.6391	6.5057	6.3515	6.1717	5.9613	5.7187	5.4447	5.1372	4.8007	4.4363	4.0495				
72	6.5318	6.4360	6.3225	6.1914	6.0389	5.8597	5.6500	5.4100	5.1382	4.8348	4.5039	4.1448	3.7705				
73	6.2166	6.1212	6.0100	5.8811	5.7298	5.5512	5.3433	5.1061	4.8370	4.5391	4.2127	3.8619	3.5050				
74	5.9047	5.8109	5.7021	5.5751	5.4248	5.2472	5.0421	4.8074	4.5424	4.2500	3.9285	3.5897	3.2544				
75	5.5977	5.5061	5.3996	5.2741	5.1246	4.9490	4.7469	4.5149	4.2552	3.9672	3.6536	3.3311	3.0164				

TABLE 5
 JOINT-LIFE IMMEDIATE ANNUITIES
 UNITED STATES WHITE PERSONS: 1959-61 - AT 4% INTEREST RATE

Age of Male	Female older than male by												
	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8
25	19.7134	19.6696	19.6166	19.5554	19.4863	19.4070	19.3136	19.2037	19.0750	18.9248	18.7513	18.5530	18.3282
26	19.5401	19.4940	19.4396	19.3778	19.3078	19.2259	19.1292	19.0154	18.8819	18.7265	18.5473	18.3428	18.1111
27	19.3578	19.3099	19.2546	19.1924	19.1208	19.0361	18.9360	18.8181	18.6798	18.5191	18.3343	18.1236	17.8850
28	19.1669	19.1178	19.0621	18.9991	18.9253	18.8377	18.7341	18.6119	18.4688	18.3030	18.1126	17.8956	17.6500
29	18.9683	18.9186	18.8626	18.7984	18.7220	18.6315	18.5242	18.3977	18.2498	18.0789	17.8829	17.6596	17.4071
30	18.7628	18.7129	18.6565	18.5903	18.5114	18.4177	18.3066	18.1757	18.0233	17.8473	17.6455	17.4159	17.1557
31	18.5508	18.5008	18.4434	18.3750	18.2935	18.1965	18.0814	17.9463	17.7893	17.6082	17.4008	17.1649	16.8991
32	18.3323	18.2820	18.2230	18.1523	18.0680	17.9675	17.8486	17.7094	17.5478	17.3616	17.1484	16.9064	16.6343
33	18.1071	18.0561	17.9951	17.9221	17.8348	17.7309	17.6082	17.4649	17.2988	17.1075	16.8886	16.6407	16.3624
34	17.8752	17.8227	17.7597	17.6843	17.5940	17.4866	17.3603	17.2130	17.0423	16.8458	16.6215	16.3672	16.0835
35	17.6361	17.5819	17.5169	17.4389	17.3455	17.2348	17.1049	16.9536	16.7783	16.5768	16.3472	16.0880	15.7977
36	17.3897	17.3338	17.2667	17.1860	17.0896	16.9757	16.8422	16.6869	16.5071	16.3007	16.0660	15.8014	15.5053
37	17.1363	17.0787	17.0092	16.9258	16.8265	16.7094	16.5725	16.4131	16.2289	16.0178	15.7782	15.5083	15.2066
38	16.8760	16.8165	16.7448	16.6587	16.5565	16.4364	16.2960	16.1326	15.9441	15.7286	15.4842	15.2092	14.9019
39	16.6092	16.5478	16.4736	16.3849	16.2801	16.1569	16.0129	15.8457	15.6531	15.4334	15.1844	14.9044	14.5917
40	16.3361	16.2726	16.1961	16.1050	15.9975	15.8713	15.7238	15.5529	15.3564	15.1325	14.8791	14.5943	14.2762
41	16.0569	15.9912	15.9125	15.8191	15.7090	15.5797	15.4289	15.2545	15.0544	14.8265	14.5688	14.2792	13.9559
42	15.7718	15.7042	15.6233	15.5277	15.4149	15.2827	15.1287	14.9510	14.7474	14.5156	14.2537	13.9594	13.6310
43	15.4812	15.4116	15.3288	15.2309	15.1156	14.9805	14.8235	14.6427	14.4357	14.2003	13.9342	13.6354	13.3021
44	15.1853	15.1140	15.0292	14.9291	14.8112	14.6734	14.5137	14.3299	14.1197	13.8807	13.6107	13.3073	12.9695
45	14.8846	14.8115	14.7249	14.6226	14.5023	14.3620	14.1997	14.0131	13.7998	13.5573	13.2833	12.9758	12.6329
46	14.5791	14.5044	14.4159	14.3114	14.1889	14.0463	13.8816	13.6923	13.4761	13.2302	12.9524	12.6410	12.2917
47	14.2693	14.1930	14.1027	13.9861	13.8715	13.7269	13.5599	13.3681	13.1490	12.8999	12.6186	12.3027	11.9459
48	13.9561	13.8782	13.7861	13.6777	13.5512	13.4046	13.2355	13.0413	12.8194	12.5671	12.2825	11.9610	11.5960
49	13.6406	13.5612	13.4673	13.3573	13.2292	13.0807	12.9096	12.7131	12.4885	12.2333	11.9448	11.6165	11.2435

TABLE 5 (continued)
 JOINT-LIFE IMMEDIATE ANNUITIES
 UNITED STATES WHITE PERSONS: 1959-61 - AT 4% INTEREST RATE

Age of Male	Female older than male by																
	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8				
50	13.3236	13.2428	13.1474	13.0358	12.9061	12.7560	12.5830	12.3842	12.1570	11.8990	11.6056	11.2697	10.8898				
51	13.0059	12.9237	12.8269	12.7140	12.5829	12.4312	12.2563	12.0554	11.8258	11.5646	11.2649	10.9216	10.5367				
52	12.6875	12.6040	12.5061	12.3920	12.2596	12.1064	11.9297	11.7267	11.4949	11.2292	10.9227	10.5731	10.1851				
53	12.3679	12.2833	12.1844	12.0692	11.9356	11.7810	11.6027	11.3978	11.1633	10.8921	10.5788	10.2247	9.8349				
54	12.0462	11.9607	11.8609	11.7448	11.6102	11.4543	11.2744	11.0678	10.8296	10.5522	10.2332	9.8766	9.4854				
55	11.7219	11.6357	11.5352	11.4184	11.2828	11.1257	10.9445	10.7359	10.4928	10.2094	9.8866	9.5287	9.1359				
56	11.3949	11.3081	11.2070	11.0895	10.9531	10.7950	10.6127	10.4010	10.1525	9.8642	9.5394	9.1806	8.7859				
57	11.0655	10.9783	10.8768	10.7587	10.6216	10.4627	10.2790	10.0632	9.8095	9.5180	9.1925	8.8327	8.4355				
58	10.7352	10.6477	10.5459	10.4275	10.2898	10.1303	9.9441	9.7236	9.4657	9.1728	8.8469	8.4856	8.0856				
59	10.4060	10.3184	10.2164	10.0976	9.9595	9.7990	9.6093	9.3843	9.1237	8.8306	8.5041	8.1406	7.7379				
60	10.0794	9.9917	9.8895	9.7704	9.6321	9.4697	9.2759	9.0472	8.7856	8.4924	8.1647	7.7988	7.3941				
61	9.7558	9.6681	9.5658	9.4467	9.3078	9.1425	8.9447	8.7138	8.4522	8.1587	7.8292	7.4607	7.0553				
62	9.4352	9.3476	9.2453	9.1263	8.9858	8.8170	8.6160	8.3844	8.1231	7.8287	7.4970	7.1267	6.7220				
63	9.1174	9.0299	8.9279	8.8086	8.6657	8.4934	8.2906	8.0594	7.7981	7.5023	7.1684	6.7975	6.3938				
64	8.8020	8.7148	8.6132	8.4928	8.3469	8.1718	7.9689	7.7383	7.4766	7.1789	6.8434	6.4733	6.0702				
65	8.4887	8.4020	8.3004	8.1781	8.0293	7.8529	7.6507	7.4206	7.1578	6.8584	6.5226	6.1536	5.7517				
66	8.1777	8.0916	7.9893	7.8645	7.7135	7.5373	7.3361	7.1060	6.8419	6.5413	6.2064	5.8382	5.4372				
67	7.8691	7.7834	7.6796	7.5523	7.4005	7.2255	7.0251	6.7944	6.5290	6.2284	5.8949	5.5279	5.1335				
68	7.5629	7.4768	7.3710	7.2421	7.0908	6.9171	6.7171	6.4857	6.2195	5.9202	5.5876	5.2235	4.8339				
69	7.2586	7.1714	7.0636	6.9343	6.7844	6.6120	6.4120	6.1797	5.9140	5.6162	5.2851	4.9255	4.5376				
70	6.9556	6.8668	6.7578	6.6293	6.4812	6.3096	6.1093	5.8768	5.6127	5.3161	4.9880	4.6332	4.2516				
71	6.6534	6.5631	6.4540	6.3272	6.1807	6.0095	5.8090	5.5773	5.3151	5.0203	4.6968	4.3456	3.9717				
72	6.3518	6.2607	6.1528	6.0279	5.8827	5.7117	5.5114	5.2817	5.0212	4.7295	4.4108	4.0639	3.7015				
73	6.0517	5.9607	5.8547	5.7318	5.5874	5.4166	5.2176	4.9902	4.7316	4.4447	4.1296	3.7901	3.4439				
74	5.7540	5.6644	5.5605	5.4392	5.2953	5.1252	4.9285	4.7030	4.4477	4.1656	3.8547	3.5261	3.2034				
75	5.4603	5.3727	5.2709	5.1506	5.0073	4.8388	4.6445	4.4211	4.1706	3.8921	3.5882	3.2750	2.9688				

TABLE 6
 JOINT-LIFE IMMEDIATE ANNUITIES
 UNITED STATES WHITE PERSONS: 1959-61 - AT 4 1/2% INTEREST RATE

Age of Male	Female older than male by												
	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8
25	18.2408	18.2044	18.1601	18.1091	18.0517	17.9860	17.9083	17.8168	17.7091	17.5831	17.4369	17.2692	17.0793
26	18.0971	18.0586	18.0130	17.9614	17.9031	17.8350	17.7543	17.6591	17.5470	17.4160	17.2645	17.0909	16.8934
27	17.9451	17.9048	17.8584	17.8064	17.7467	17.6759	17.5921	17.4930	17.3764	17.2434	17.0835	16.9040	16.6999
28	17.7850	17.7436	17.6968	17.6441	17.5823	17.5088	17.4217	17.3186	17.1975	17.0566	16.8944	16.7088	16.4980
29	17.6177	17.5757	17.5287	17.4747	17.4106	17.3343	17.2437	17.1365	17.0109	16.8651	16.6975	16.5059	16.2894
30	17.4439	17.4017	17.3542	17.2985	17.2319	17.1527	17.0584	16.9471	16.8170	16.6665	16.4933	16.2955	16.0715
31	17.2639	17.2216	17.1731	17.1153	17.0463	16.9639	16.8659	16.7506	16.6161	16.4606	16.2819	16.0780	15.8475
32	17.0776	17.0350	16.9850	16.9251	16.8534	16.7677	16.6661	16.5467	16.4079	16.2474	16.0631	15.8533	15.6155
33	16.8850	16.8417	16.7898	16.7276	16.6532	16.5642	16.4589	16.3356	16.1924	16.0269	15.8371	15.6213	15.3784
34	16.6858	16.6412	16.5874	16.5229	16.4455	16.3532	16.2444	16.1172	15.9695	15.7990	15.6037	15.3823	15.1333
35	16.4797	16.4334	16.3778	16.3108	16.2304	16.1349	16.0226	15.8915	15.7393	15.5638	15.3633	15.1363	14.8813
36	16.2666	16.2186	16.1609	16.0913	16.0080	15.9094	15.7936	15.6585	15.5018	15.3215	15.1160	14.8835	14.6226
37	16.0465	15.9968	15.9369	15.8647	15.7785	15.6768	15.5576	15.4186	15.2575	15.0725	14.8620	14.6242	14.3575
38	15.8197	15.7682	15.7060	15.6312	15.5423	15.4375	15.3148	15.1718	15.0065	14.8170	14.6016	14.3586	14.0952
39	15.5863	15.5330	15.4684	15.3911	15.2995	15.1917	15.0655	14.9186	14.7492	14.5553	14.3352	14.0871	13.8070
40	15.3466	15.2912	15.2244	15.1447	15.0505	14.9397	14.8100	14.6594	14.4860	14.2879	14.0632	13.8100	13.5263
41	15.1008	15.0434	14.9743	14.8923	14.7954	14.6816	14.5485	14.3943	14.2172	14.0150	13.7858	13.5276	13.2384
42	14.8490	14.7896	14.7184	14.6341	14.5347	14.4178	14.2815	14.1239	13.9431	13.7369	13.5033	13.2402	12.9456
43	14.5915	14.5301	14.4570	14.3705	14.2693	14.1486	14.0092	13.8484	13.6640	13.4540	13.2160	12.9480	12.6482
44	14.3285	14.2653	14.1903	14.1015	13.9968	13.8742	13.7320	13.5681	13.3803	13.1664	12.9242	12.6514	12.3466
45	14.0604	13.9955	13.9185	13.8274	13.7202	13.5951	13.4501	13.2832	13.0922	12.8746	12.6282	12.3508	12.0406
46	13.7871	13.7206	13.6417	13.5484	13.4389	13.3113	13.1638	12.9940	12.7998	12.5786	12.3280	12.0464	11.7234
47	13.5093	13.4411	13.3603	13.2649	13.1532	13.0234	12.8734	12.7009	12.5036	12.2788	12.0243	11.7379	11.4130
48	13.2276	13.1578	13.0751	12.9777	12.8640	12.7321	12.5798	12.4047	12.2043	11.9760	11.7179	11.4254	11.0920
49	12.9430	12.8717	12.7872	12.6880	12.5725	12.4386	12.2840	12.1064	11.9030	11.6714	11.4091	11.1095	10.7677

TABLE 6
 JOINT-LIFE IMMEDIATE ANNUITIES
 UNITED STATES WHITE PERSONS: 1959-61 - AT 4 1/2% INTEREST RATE

Age of Male	Female older than male by												
	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8
25	18.2408	18.2044	18.1601	18.1091	18.0517	17.9860	17.9083	17.8168	17.7091	17.5831	17.4369	17.2692	17.0783
26	18.0971	18.0586	18.0130	17.9614	17.9031	17.8350	17.7543	17.6591	17.5470	17.4160	17.2645	17.0909	16.8934
27	17.9451	17.9048	17.8584	17.8064	17.7467	17.6759	17.5921	17.4930	17.3764	17.2494	17.0835	16.9040	16.6999
28	17.7850	17.7436	17.6968	17.6441	17.5823	17.5088	17.4217	17.3186	17.1975	17.0566	16.8944	16.7088	16.4980
29	17.6177	17.5757	17.5287	17.4747	17.4106	17.3343	17.2437	17.1365	17.0109	16.8651	16.6975	16.5059	16.2894
30	17.4439	17.4017	17.3542	17.2985	17.2319	17.1527	17.0584	16.9471	16.8170	16.6665	16.4933	16.2955	16.0715
31	17.2639	17.2216	17.1731	17.1153	17.0463	16.9639	16.8659	16.7506	16.6161	16.4606	16.2819	16.0780	15.8475
32	17.0776	17.0350	16.9850	16.9251	16.8534	16.7677	16.6661	16.5467	16.4079	16.2474	16.0631	15.8533	15.6155
33	16.8850	16.8417	16.7898	16.7276	16.6532	16.5642	16.4589	16.3356	16.1924	16.0269	15.8371	15.6213	15.3784
34	16.6858	16.6412	16.5874	16.5229	16.4455	16.3532	16.2444	16.1172	15.9695	15.7990	15.6037	15.3823	15.1333
35	16.4797	16.4334	16.3778	16.3108	16.2304	16.1349	16.0226	15.8915	15.7393	15.5638	15.3633	15.1363	14.8813
36	16.2666	16.2186	16.1609	16.0913	16.0080	15.9094	15.7936	15.6585	15.5018	15.3215	15.1160	14.8835	14.6226
37	16.0465	15.9968	15.9369	15.8647	15.7785	15.6768	15.5576	15.4186	15.2575	15.0725	14.8620	14.6242	14.3575
38	15.8197	15.7682	15.7060	15.6312	15.5423	15.4375	15.3148	15.1718	15.0065	14.8170	14.6016	14.3585	14.0852
39	15.5863	15.5330	15.4684	15.3911	15.2995	15.1917	15.0655	14.9186	14.7492	14.5553	14.3352	14.0871	13.8070
40	15.3466	15.2912	15.2244	15.1447	15.0505	14.9397	14.8100	14.6594	14.4860	14.2879	14.0632	13.8100	13.5253
41	15.1008	15.0434	14.9743	14.8923	14.7954	14.6816	14.5485	14.3943	14.2172	14.0150	13.7858	13.5276	13.2384
42	14.8490	14.7896	14.7184	14.6341	14.5347	14.4178	14.2815	14.1239	13.9431	13.7369	13.5033	13.2402	12.9456
43	14.5915	14.5301	14.4570	14.3705	14.2683	14.1486	14.0092	13.8484	13.6640	13.4540	13.2160	12.9480	12.6482
44	14.3285	14.2653	14.1903	14.1015	13.9968	13.8742	13.7320	13.5681	13.3803	13.1664	12.9242	12.6514	12.3466
45	14.0604	13.9955	13.9185	13.8274	13.7202	13.5951	13.4501	13.2832	13.0922	12.8746	12.6282	12.3508	12.0406
46	13.7871	13.7206	13.6417	13.5484	13.4389	13.3113	13.1638	12.9940	12.7998	12.5786	12.3280	12.0464	11.7294
47	13.5093	13.4411	13.3603	13.2649	13.1532	13.0234	12.8734	12.7009	12.5036	12.2788	12.0243	11.7379	11.4130
48	13.2276	13.1578	13.0751	12.9777	12.8640	12.7321	12.5798	12.4047	12.2043	11.9760	11.7179	11.4254	11.0920
49	12.9430	12.8717	12.7872	12.6880	12.5725	12.4386	12.2840	12.1064	11.9030	11.6714	11.4091	11.1095	10.7677

TABLE 6 (continued)
 JOINT-LIFE IMMEDIATE ANNUITIES
 UNITED STATES WHITE PERSONS: 1959-61 - AT 4 1/2% INTEREST RATE

Age of Male	Female older than male by																
	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14	
50	12.6565	12.5836	12.4975	12.3967	12.2794	12.1436	11.9869	11.8067	11.6004	11.3658	11.0981	10.7906	10.4414				
51	12.3686	12.2942	12.2066	12.1043	11.9855	11.8479	11.6891	11.5065	11.2974	11.0592	10.7850	10.4697	10.1149				
52	12.0794	12.0036	11.9147	11.8111	11.6907	11.5514	11.3906	11.2056	10.9940	10.7510	10.4697	10.1475	9.7889				
53	11.7883	11.7113	11.6213	11.5164	11.3947	11.2538	11.0910	10.9038	10.6893	10.4404	10.1519	9.8247	9.4635				
54	11.4947	11.4166	11.3255	11.2195	11.0966	10.9541	10.7895	10.6004	10.3817	10.1264	9.8318	9.5014	9.1380				
55	11.1978	11.1190	11.0270	10.9200	10.7958	10.6520	10.4858	10.2942	10.0705	9.8088	9.5098	9.1774	8.8116				
56	10.8976	10.8180	10.7252	10.6174	10.4922	10.3470	10.1794	9.9845	9.7551	9.4881	9.1865	8.8524	8.4839				
57	10.5944	10.5142	10.4209	10.3123	10.1862	10.0399	9.8705	9.6713	9.4363	9.1656	8.8626	8.5268	8.1549				
58	10.2897	10.2090	10.1152	10.0060	9.8789	9.7318	9.5597	9.3556	9.1159	8.8432	8.5391	8.2011	7.8256				
59	9.9852	9.9042	9.8099	9.7001	9.5725	9.4241	9.2483	9.0393	8.7965	8.5229	8.2175	7.8766	7.4976				
60	9.6824	9.6012	9.5065	9.3963	9.2681	9.1175	8.9374	8.7243	8.4801	8.2058	7.8985	7.5544	7.1725				
61	9.3819	9.3005	9.2056	9.0950	8.9660	8.8122	8.6278	8.4121	8.1673	7.8921	7.5824	7.2350	6.8515				
62	9.0834	9.0019	8.9068	8.7961	8.6654	8.5079	8.3199	8.1031	7.8580	7.5813	7.2687	6.9187	6.5350				
63	8.7870	8.7055	8.6104	8.4992	8.3658	8.2046	8.0145	7.7975	7.5519	7.2732	6.9577	6.6063	6.2227				
64	8.4923	8.4108	8.3159	8.2033	8.0668	7.9026	7.7119	7.4950	7.2484	6.9672	6.6495	6.2980	5.9141				
65	8.1989	8.1177	8.0226	7.9079	7.7682	7.6024	7.4120	7.1950	6.9469	6.6633	6.3446	5.9934	5.6096				
66	7.9069	7.8261	7.7302	7.6129	7.4707	7.3047	7.1148	6.8974	6.6473	6.3620	6.0435	5.6922	5.3103				
67	7.6166	7.5361	7.4384	7.3185	7.1752	7.0099	6.8204	6.6020	6.3501	6.0641	5.7461	5.3952	5.0170				
68	7.3280	7.2469	7.1472	7.0253	6.8822	6.7178	6.5284	6.3086	6.0555	5.7701	5.4522	5.1033	4.7289				
69	7.0406	6.9582	6.8563	6.7338	6.5918	6.4282	6.2383	6.0173	5.7639	5.4795	5.1623	4.8170	4.4454				
70	6.7537	6.6697	6.5663	6.4444	6.3037	6.1406	5.9500	5.7282	5.4759	5.1920	4.8770	4.5356	4.1673				
71	6.4670	6.3813	6.2776	6.1570	6.0176	5.8546	5.6633	5.4419	5.1909	4.9080	4.5968	4.2581	3.8965				
72	6.1803	6.0935	5.9907	5.8718	5.7333	5.5701	5.3786	5.1587	4.9087	4.6282	4.3210	3.9858	3.6347				
73	5.8942	5.8074	5.7063	5.5889	5.4510	5.2876	5.0969	4.8787	4.6301	4.3537	4.0494	3.7206	3.3846				
74	5.6099	5.5242	5.4249	5.3089	5.1712	5.0081	4.8192	4.6024	4.3565	4.0842	3.7833	3.4645	3.1480				
75	5.3288	5.2449	5.1474	5.0321	4.8947	4.7328	4.5459	4.3307	4.0889	3.8195	3.5248	3.2205	2.9226				

TABLE 7
 JOINT-LIFE IMMEDIATE ANNUITIES
 UNITED STATES WHITE PERSONS: 1959-61 - AT 5% INTEREST RATE

Age of Male	Female older than male by																
	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14	
25	16.9441	16.9137	16.8765	16.8337	16.7858	16.7310	16.6662	16.5895	16.4991	16.3928	16.2690	16.1265	15.9637				
26	16.8245	16.7920	16.7536	16.7103	16.6616	16.6047	16.5371	16.4570	16.3624	16.2515	16.1227	15.9747	15.8056				
27	16.6971	16.6630	16.6239	16.5802	16.5302	16.4708	16.4002	16.3166	16.2178	16.1022	15.9684	15.8148	15.6394				
28	16.5622	16.5271	16.4876	16.4433	16.3914	16.3294	16.2558	16.1684	16.0654	15.9452	15.8063	15.6470	15.4653				
29	16.4206	16.3849	16.3452	16.2998	16.2456	16.1811	16.1042	16.0130	15.9057	15.7810	15.6370	15.4718	15.2837				
30	16.2729	16.2371	16.1969	16.1498	16.0934	16.0261	15.9458	15.8507	15.7392	15.6099	15.4606	15.2896	15.0951				
31	16.1194	16.0835	16.0424	15.9933	15.9346	15.8643	15.7806	15.6816	15.5660	15.4319	15.2774	15.1004	14.8938				
32	15.9600	15.9237	15.8812	15.8301	15.7689	15.6956	15.6083	15.5056	15.3858	15.2469	15.0870	14.9043	14.6975				
33	15.7945	15.7576	15.7133	15.6601	15.5963	15.5198	15.4290	15.3225	15.1985	15.0548	14.8895	14.7011	14.4883				
34	15.6228	15.5845	15.5385	15.4831	15.4165	15.3369	15.2427	15.1325	15.0041	14.8556	14.6850	14.4911	14.2722				
35	15.4444	15.4046	15.3568	15.2990	15.2296	15.1468	15.0494	14.9353	14.8026	14.6493	14.4736	14.2741	14.0493				
36	15.2592	15.2179	15.1680	15.1078	15.0356	14.9498	14.8490	14.7311	14.5941	14.4360	14.2553	14.0504	13.8197				
37	15.0673	15.0244	14.9725	14.9097	14.8347	14.7460	14.6418	14.5201	14.3787	14.2160	14.0304	13.8202	13.5837				
38	14.8689	14.8242	14.7701	14.7049	14.6272	14.5355	14.4279	14.3023	14.1567	13.9896	13.7991	13.5836	13.3415				
39	14.6641	14.6176	14.5612	14.4935	14.4132	14.3186	14.2076	14.0781	13.9285	13.7570	13.5618	13.3411	13.0932				
40	14.4530	14.4045	14.3459	14.2759	14.1930	14.0954	13.9810	13.8478	13.6942	13.5185	13.3186	13.0929	12.8392				
41	14.2358	14.1853	14.1246	14.0523	13.9668	13.8662	13.7484	13.6117	13.4543	13.2744	13.0700	12.8391	12.5798				
42	14.0126	13.9602	13.8974	13.8229	13.7348	13.6312	13.5102	13.3700	13.2089	13.0249	12.8160	12.5801	12.3152				
43	13.7837	13.7294	13.6646	13.5878	13.4972	13.3906	13.2665	13.1231	12.9584	12.7704	12.5570	12.3161	12.0457				
44	13.5492	13.4931	13.4264	13.3474	13.2541	13.1447	13.0177	12.8711	12.7029	12.5110	12.2932	12.0472	11.7717				
45	13.3094	13.2516	13.1829	13.1016	13.0058	12.8939	12.7640	12.6144	12.4428	12.2470	12.0248	11.7741	11.4928				
46	13.0643	13.0049	12.9343	12.8508	12.7526	12.6381	12.5056	12.3530	12.1780	11.9785	11.7519	11.4967	11.2084				
47	12.8143	12.7533	12.6808	12.5951	12.4947	12.3779	12.2428	12.0873	11.9091	11.7058	11.4751	11.2148	10.9195				
48	12.5603	12.4975	12.4231	12.3354	12.2329	12.1139	11.9764	11.8181	11.6367	11.4296	11.1951	10.9285	10.6234				
49	12.3030	12.2386	12.1624	12.0728	11.9684	11.8473	11.7073	11.5463	11.3617	11.1512	10.9122	10.6382	10.3244				

TABLE 7 (continued)
 JOINT-LIFE IMMEDIATE ANNUITIES
 UNITED STATES WHITE PERSONS: 1959-61 - AT 5% INTEREST RATE

Age of Male	Female older than male by																
	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14	
50	12.0433	11.9773	11.8994	11.8081	11.7018	11.5787	11.4365	11.2727	11.0850	10.8711	10.6265	10.3445	10.0229				
51	11.7818	11.7142	11.6347	11.5419	11.4339	11.3088	11.1643	10.9980	10.8073	10.5896	10.3382	10.0481	9.7234				
52	11.5184	11.4495	11.3686	11.2742	11.1646	11.0376	10.8910	10.7220	10.5285	10.3059	10.0471	9.7498	9.4178				
53	11.2528	11.1826	11.1004	11.0047	10.8935	10.7648	10.6160	10.4446	10.2479	10.0192	9.7530	9.4502	9.1150				
54	10.9841	10.9127	10.8294	10.7324	10.6199	10.4894	10.3385	10.1650	9.9640	9.7286	9.4560	9.1494	8.8113				
55	10.7118	10.6395	10.5551	10.4570	10.3431	10.2110	10.0583	9.8822	9.6759	9.4338	9.1564	8.8473	8.5061				
56	10.4356	10.3625	10.2772	10.1781	10.0629	9.9293	9.7750	9.5953	9.3831	9.1354	8.8549	8.5435	8.1989				
57	10.1561	10.0822	9.9962	9.8961	9.7798	9.6449	9.4886	9.3043	9.0863	8.8346	8.5521	8.2383	7.8897				
58	9.8743	9.7999	9.7132	9.6123	9.4950	9.3590	9.1997	9.0103	8.7874	8.5331	8.2490	7.9323	7.5795				
59	9.5922	9.5173	9.4300	9.3284	9.2102	9.0727	8.9096	8.7150	8.4886	8.2329	7.9469	7.6268	7.2697				
60	9.3111	9.2357	9.1480	9.0456	8.9268	8.7869	8.6193	8.4204	8.1920	7.9351	7.6467	7.3227	6.9620				
61	9.0315	8.9558	8.8676	8.7648	8.6449	8.5016	8.3295	8.1277	7.8983	7.6399	7.3485	7.0206	6.6575				
62	8.7533	8.6774	8.5888	8.4856	8.3638	8.2166	8.0407	7.8374	7.6072	7.3469	7.0520	6.7209	6.3567				
63	8.4765	8.4004	8.3116	8.2078	8.0831	7.9320	7.7537	7.5498	7.3186	7.0557	6.7574	6.4242	6.0593				
64	8.2006	8.1244	8.0356	7.9303	7.8023	7.6480	7.4687	7.2644	7.0318	6.7660	6.4648	6.1307	5.7647				
65	7.9254	7.8493	7.7602	7.6526	7.5213	7.3652	7.1857	6.9809	6.7463	6.4776	6.1747	5.8402	5.4735				
66	7.6510	7.5752	7.4850	7.3747	7.2407	7.0840	6.9047	6.6990	6.4621	6.1911	5.8877	5.5523	5.1857				
67	7.3777	7.3019	7.2100	7.0968	6.9615	6.8051	6.6258	6.4187	6.1794	5.9072	5.6037	5.2679	4.9051				
68	7.1054	7.0289	6.9347	6.8194	6.6840	6.5282	6.3485	6.1397	5.8987	5.6264	5.3224	4.9878	4.6279				
69	6.8336	6.7557	6.6592	6.5431	6.4083	6.2531	6.0725	5.8621	5.6204	5.3484	5.0444	4.7126	4.3545				
70	6.5618	6.4821	6.3840	6.2681	6.1344	5.9793	5.7977	5.5861	5.3448	5.0728	4.7702	4.4415	4.0859				
71	6.2895	6.2080	6.1094	5.9946	5.8618	5.7065	5.5238	5.3121	5.0716	4.7999	4.5005	4.1737	3.8239				
72	6.0166	5.9339	5.8359	5.7225	5.5904	5.4345	5.2513	5.0405	4.8005	4.5307	4.2345	3.9104	3.5730				
73	5.7437	5.6609	5.5643	5.4522	5.3203	5.1639	4.9811	4.7716	4.5324	4.2659	3.9719	3.6534	3.3272				
74	5.4720	5.3900	5.2950	5.1839	5.0520	4.8956	4.7142	4.5056	4.2685	4.0055	3.7142	3.4048	3.0971				
75	5.2027	5.1223	5.0288	4.9184	4.7864	4.6308	4.4510	4.2436	4.0100	3.7493	3.4634	3.1676	2.8776				

TABLE 8
LIFE TABLE SURVIVORS; WHITE PERSONS: UNITED STATES, 1959 - 61

Age	Male l_x	Female l_y	Age	Male l_x	Female l_y
20	9,590,772	9,713,481	50	8,742,387	9,252,150
21	9,575,477	9,708,007	51	8,658,939	9,208,391
22	9,559,266	9,702,351	52	8,567,331	9,160,822
23	9,542,646	9,696,525	53	8,467,767	9,109,559
24	9,526,265	9,690,540	54	8,360,692	9,054,837
25	9,510,577	9,684,392	55	8,246,311	8,996,667
26	9,495,747	9,678,065	56	8,124,669	8,934,859
27	9,481,621	9,671,518	57	7,995,228	8,868,777
28	9,467,914	9,664,687	58	7,856,913	8,797,413
29	9,454,185	9,657,492	59	7,708,327	8,719,494
30	9,440,060	9,649,852	60	7,548,471	8,633,944
31	9,425,367	9,641,692	61	7,377,076	8,540,016
32	9,410,043	9,632,948	62	7,194,444	8,437,318
33	9,393,945	9,623,562	63	7,000,904	8,325,539
34	9,376,941	9,613,479	64	6,797,031	8,204,507
35	9,358,860	9,602,625	65	6,583,375	8,073,892
36	9,339,467	9,590,902	66	6,360,252	7,933,263
37	9,318,477	9,578,187	67	6,127,965	7,781,821
38	9,295,583	9,564,342	68	5,887,115	7,618,437
39	9,270,451	9,549,212	69	5,638,401	7,441,775
40	9,242,739	9,532,641	70	5,382,536	7,250,739
41	9,212,093	9,514,484	71	5,120,355	7,045,118
42	9,178,169	9,494,596	72	4,852,576	6,824,688
43	9,140,625	9,472,809	73	4,579,707	6,588,408
44	9,099,114	9,448,947	74	4,302,198	6,335,093
45	9,053,254	9,422,834	75	4,020,739	6,064,092
46	9,002,777	9,394,303	76	3,736,632	5,776,548
47	8,947,242	9,363,179	77	3,451,306	5,473,551
48	8,885,895	9,329,255	78	3,165,846	5,154,630
49	8,817,845	9,292,315	79	2,881,364	4,819,096