ORIGINAL TABLES.

Annuity-Values on Two Joint Lives, by O^{M} Table, at $2\frac{3}{4}$ per-cent.

To the Editor of the Journal of the Institute of Actuaries.

DEAR SIR,—I have had occasion to form a table of a_{xy} by the O^M Table at $2\frac{3}{4}$ per-cent, and now beg, with much pleasure, to submit it for insertion in the *Journal* of the Institute.

Great care was taken to secure accuracy, and, wherever possible, a second check on the subsidiary tables was obtained by casting. Five-figure logarithms were employed throughout, but, in deriving a_{xy} from $\log a_{xy}$, seven-figure anti-logarithms were used and cut down to the requisite number of figures, the resulting table being checked from Scott's five-figure anti-logarithms. Finally every tenth value was compared with the mean of the $2\frac{1}{2}$ per-cent and 3 per-cent annuities already calculated by the Institute, and no discrepancies were brought to light.

The proofs have been checked both by reading over and by casting.

I hope there are some readers of the *Journal* who will find the Table useful.

Yours very truly,

N. BLANCHARD.

 Lincoln's Inn Fields, London, W.C.,
 11 September 1908.

ГОст.

WHOLE-LIFE PARTICIPATING ASSURANCES .- MALE LIVES.

Values of Annuities on Two Joint Lives.

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$\begin{array}{c c c c c c c c c c c c c c c c c c c $							·879			1.161	1.262	2
$\begin{array}{c c c c c c c c c c c c c c c c c c c $							·888			1.176	1.279	1
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	70			$\cdot 642$						1.190	1.295	70
$\begin{array}{c c c c c c c c c c c c c c c c c c c $					Jaro		.000	1.001	1.000	1.000	1.070	
7 :309 :519 :655 :764 :842 :921 1:019 1:117 1:22 6 :310 :521 :658 :769 :848 :928 1:027 1:126 1:22 5 :311 :523 :662 :773 :853 :934 1:034 1:142 1:24 64 :312 :526 :665 :777 :858 :940 1:041 1:142 1:26 3 :313 :527 :668 :781 :862 :945 1:047 1:149 1:26 2 :314 :529 :671 :784 :867 :950 1:052 1:155 1:27 1 :314 :531 :673 :788 :870 :954 1:058 1:161 1:27 60 :315 :532 :675 :791 :874 :958 1:063 1:167 1:28			.213	•646	*753		.906	1.001	1.096	1.203	1.310	69
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $.216	•651	•759				1.107		1.324	8
5 ·311 ·523 ·662 ·773 ·853 ·934 1·034 1·134 1·24 64 ·312 ·526 ·665 ·777 ·858 ·940 1·041 1·142 1·25 3 ·313 ·527 ·668 ·781 ·862 ·945 1·047 1·149 1·26 2 ·314 ·529 ·671 ·784 ·867 ·950 1·052 1·155 1·27 1 ·314 ·531 ·673 ·788 ·870 ·954 1·058 1·161 1·27 60 ·315 ·532 ·675 ·791 ·874 ·958 1·063 1·167 1·28								1.019	1.117	1.226	1.337	7
64 ·312 ·526 ·665 ·777 ·858 ·940 1·041 1·142 1·25 3 ·313 ·527 ·668 ·781 ·862 ·945 1·047 1·149 1·26 2 ·314 ·529 ·671 ·784 ·867 ·950 1·052 1·155 1·27 1 ·314 ·531 ·673 ·788 ·870 ·954 1·058 1·161 1·27 60 ·315 ·532 ·675 ·791 ·874 ·958 1·063 1·167 1·28										1.237	1.349	6
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	5	$\cdot 311$	•523	··662	•773	•853	•934	1.034	1.134	1.246	1.360.	5
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	64	$\cdot 312$.526	.665	•777	·858	·940	1.041	1.142	1.255	1.370	64
$\begin{array}{c c c c c c c c c c c c c c c c c c c $.527		.781	·862	·945	1.047	1.149	1.263	1.380	3
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$.529	.671	.784	.867	•950	1.052	1.155	1.271	1.388	2
60 315 532 675 791 874 958 1063 1167 128	ī		·531	.673	788	-870		1.058	1.161	1.278	1.397	ĩ
				.675		874		1.063	1.167	1.284	1.404	60
		101		- 99	98	97		95	94	93	92	
				1			<u> </u>				<u> </u>	

WHOLE-LIFE PARTICIPATING ASSURANCES.-MALE LIVES.

v

Values of Annuities on Two Joint Lives.

x						y					
	20	21	22	23	24	25	26	27	28	29	x
10	21.415	21.244	21.067	20.884	20.695	20.501	20.300	20.094	19.883	19.665	10
1	21.415 21.335	21.168	21007 20.994	20.834 20.814	20.635	20.301 20.436	20.300	20.034	19.883	19.605 19.611	10
2	21.355 21.251	21.086	20.994 20.916	20.814 20.738	20.028	20 450	20 238				2
3								19.970	19.764	19.552	23
4	21.162	21.001	20.832	20.659	20·478 20·396	20 292	20.101	19.902	19.699	19.490	3 4
	21.067	20.909	20.744	20.573	20.390	20.213	20024	19.830	19.630	19.424	4
15	20.966	20.811	20.650	20.482	20.309	20.130	19.943	19.752	19.556	19.352	15
6	20.859	20.708	20.550	20.386	20.216	20.041	19.858	19.669	19.476	19.002 19.276	6
7	20.000 20.748	20.600	20.446	20.285	20.119	19.946	19.767	$19.000 \\ 19.583$	19.392	19.196	7
8	20.630	20.485	20.335	20.100	20.015	19.846	19.671	19.490	19304	19 130 190 190100	8
9	20505 20505	20.365	20.335 20.218	20.066	19.906	19.741	19.570	19.392	19.304 19.209	$19 \cdot 110$ 19 · 020	9
1 1	20 000	20 000	20 210	20 000	19 200	19 (41	19970	19 394	19 209	19 020	U U
20	20.374	20.237	20095	19.946	19.790	19.629	19.462	19.288	19.109	18.923	20
	20	20.104	19.966	19.821	19.669	19.512	19.349	19.179	19.004	18.822	1
1	20	20 10 1	19.831	19.690	19.543	19.390	19.230	19.065	13.001 18.894	18022 18 716	2
		155	22	19.553	19.410	19.261	19.106	18.944	18.777	18.604	ŝ
	91		22	23	19.410 19.271	19.126	18.975	18.818	18.655	18.486	4
		90		23		10120	10.910	10 010	10 000	10 400	-
91	·739		89		24	18.985	$18 \cdot 839$	18.686	18.528	$18\ 363$	25
90	•781	.827				25	18.696	18.548	18.395	18.234	6
89				88		~0	26	18.404	18.255	18.099	7
	·824	874	·925		87		20	27	18.110	17.959	8
87	·866	·920	·975	1.029		86		21		17.813	9
	•907	·965	1.024	1.083	1.141		85		28		Ũ
6	•948	1.010	1.073	1.136	1.198	1.261		84		29	
5	·987	1.053	1.120	1.188	1.255	1.322	1.388	·	_		
04	-	1.007	1 1 0 5	1 000	1 010	1 000			83		
84	1.025	1.095	1.167	1.239	1.310	1.382	1.454	1.524	- 220	82	
3	1.062	1.136	1212	1.288	1.365	1.442	1.518	1.594	1.669		
2	1.098	1.175	1.256	1.336	1.418	1500	1.581	1.662	1.743	1.822	82
1	1.132	1.213	1.298	1.383	1.469	1.556	1.642	1.729	1.812	1.901	1
80	1.164	1.250	1.339	1.428	1.519	1.610	1.702	1.794	1.886	1.977	80
79	1.100	1.00*	1.057	1.471	1.500	1.000	1.700	1.050	1.077	9.059	
8	1.196	1.285	1.377	1.471	1.566	1.663	1.760	1.858	1.955	2.052	79
	1.225	1.318	1.414	1.512	1.612	1.714	1.816	1.919	2.022	2.125	8
7	1.253	1.349	1.450	1.552	1.656	1.762	1.870	1.978	2.087	2.195	7
6	1.280	1.379	1.483	1.590	1.698	1809	1.921	2.035	2.149	2.263	6
5	1.302	1.408	1.515	1.625	1.738	1.853	1.970	2.089	2.209	2.329	5
74	1.990	1.494	1.540	1.659	1.776	1.000	2.017	0141	9.900	9.909	
	1.329	1.434	1.546	1.691	1.770 1.812	1.896		2141	2.266	2.392	74
3	1.351	1.460	1.574			1.936	2.062	2.190	2.321	2.452	3
2	1.372	1.483	1.601	1.721	1.846	1.974	2.104	2.238	2.373	2.510	2
1	1.391	1.505	1.626	1.750	1.877	2.009	2.144	2.282	2.423	2.565	1
70	1.409	1.526	1.649	1.776	1.908	2.043	2.182	2.324	2.470	$2\ 617$	70
69	1.496	1.546	1.671	1.801	1.936	2.075	2.218	2.364	2.514	2.666	69
	1.426			1.801 1.825	1.960 1.962	$\frac{2.075}{2.105}$	$2.210 \\ 2.251$		2.514		
8	1.442	1.564	1.692					2.402		2.713	8
7	1.457	1.581	1.711	1.847	1.987	2.133	2.283	2.437	2.595	2.757	7
6	1.471	1.596	1.729	1.867	2.010	2.159	2.312	2.470	2.632	2.798	6
5	1.484	1.611	1.746	1.886	2.032	2.183	2.339	2.501	2.667	2.837	5
64	1.495	1.625	1.761	1.904	2.052	2.206	2.365	2.530	2.699	2.873	64
04 3	1.506	1.637	1.776	1.920	2.002	2.200 2.227	$2305 \\ 2.389$	2.557	2.099	2.907	04
2		1.637 1.649	1.789	1.935	2.070	$\frac{2}{2} \frac{227}{2}$	2.389 2.411	2.557 2.582	2.758	2.907	2
	1.516			1.935 1.949	2.088	2.247	2.411 2.432				
60	1.526	1.659	1.801	1.949	2.104	2.205		2.605	2.784 2.809	$2.968 \\ 2.996$	60
	1.534	1.669	1.813		2.118	2-282	2.451	2.627	2.809	2.896	
. !	9 I	90	89	88	87	86	85	84	83	82	1

ГОст.

WHOLE-LIFE PARTICIPATING ASSURANCES.-MALE LIVES

Values of Annuities on Two Joint Lives.

x						y					x
<i>x</i>	30	31	32	33	34	35	36	37	38	39	<i>x</i>
10	19.443	19.215	18.981	18.742	18.497	18.247	17.991	17.729	17.461	17.188	10
1	$19 \cdot 391$	19.165	18.931 18.934	18.697	18.454	18.206	17.952	17.692	17.426	17.155	1
2	19.331 19.335	19103 19.112	18.883	18.648	18.408	18 161	17.932 17.910	17.052 17.652	$17 \cdot 389$	$17 \cdot 100$ $17 \cdot 119$	2
3						18.101 18.115		17.632 17.610	17.348	17.119 17.081	3
4	$\begin{array}{c c} 19.275 \\ 19.211 \end{array}$	19.055 18.994	18·828 18·770	18.596 18.541	18.359 18.306	18.064	17.865 17.817	17.564	17.343 17.305	17.081 17.040	4
15	19.143	18.928	18.707	18.481	18.249	18.009	17.765	17 515	17.258	16.995	15
6	19.070	18.858	18.641	18.417	18 249 18.187	13003 17.951	17.710	17.462	17208 17208	16.947	6
7	18.993	18.785	18.570	18.350	$18 \cdot 107$ $18 \cdot 123$	17.890	17.651	$17 \cdot 402$ $17 \cdot 406$	17.203 17.155	16.897	7
8	18.911	18 706	18.495	18.278	18.054	17.824	17.588	17 ± 00 $17 \cdot 346$	17.097	16.843	8
9	18.824	18 623	18.415	18278 18201	17.981	17.754	17.521	17.283	17.037	16.785	9
20	18.731	18.534	18.329	18.119	17.903	17.680	17.450	17.214	16 972	16.723	20
1	18.631	18.440	18.240	18.034	17.821	17.601	17.375	17.143	16.904	16.658	1
â	18.532	18.342	10240 18.146	17.943	17.734	17.518	17.296	17.067	16.831	16.589	2
3	18.424	18.238	18.046	17.847	17.642	17.430	17.212	16.987	16.755	16.516	3
4	18.310	10200 18.129	17.941	17.747	17.546	17.338	17.123	16.902	16.674	16.310 16.439	4
25	18·192	18.015	17.831	17.641	17.445	17.241	17.030	16 ·814	16.589	16359	25
6	18.068	17.895	17.716	17.530	17.338	17.138	16.933	16.720	16.500	16.273	6
7	17.937	17.769	17.595	17.414	17.226	17.031	1 6 ·830	$16\ 621$	16.406	16.183	7
8	17.802	17.639	17.469	$17 \cdot 293$	17.110	16.920	16.723	16.519	16.308	16.090	8
9	17.660	17.502	17.337	17.165	16.987	16.802	16 61 0	16.111	16.202	15.992	9
30	17.513	17.359	17.199	17.033	16.859	16.679	16·492	16.298	16.096	15.888	30
	30	17.210	17.055	16.893	16.726	16.550	16.368	16.179	15.983	15.779	1
		31	16.905	16.749	16.586	16.412	16.239	16.055	15.864	15.665	2
(32	16.598	16.440	16.275	16·103	15.925	15.739	15.545	3
	81	80		83	16.287	16.127	15.961	15.788	15.608	15.420	4
81	1.985		79		34	15.973	15.812	15.645	15.470	15.288	35
80	2.067	2.156				35	15.658	15.495	15.326	15.149	6
				78			36	15.339	15.175	15.004	7
79	2.148	2.243	2.337		77			37	15.018	14.853	8
8	2.227	2.328	2.428	2.527		76		57	38	14.691	9
7	2.304	2.411	2.518	2.623	2.726		75			39	
6	2.378	2.492	2.602	2.717	2.827	2.934		74			
5	2·45 0	2.570	2.689	2.808	2.925	3·04 0	3.152		73		
74	2.519	2.645	2.771	2.897	3 ·020	3.143	3.262	3.380		72	
3	2.585	2.718	2.850	2.982	3·1 13	3.242	3.369	3.491	3.612		
2	2.648	2.787	2.926	3.064	3.202	3.339	3.473	3.606	3.736	3.863	72
1	2.708	2.853	2.998	3.143	3 288	3.432	3.574	3.714	3.851	3.986	1
70	2.766	2.916	3.068	3.219	3.371	3.221	3.671	3 818	3.963	4.106	70
69	2.820	2.977	3.134	3.292	3.450	3.607	3.764	3.919	4.071	4.222	69
8	2.872	3.034	3.197	3.361	3.525	3.689	3.853	4.015	4.176	4.334	8
7	2.921	3 •088	3.256	3.426	3.297	3.768	3.938	4.105	4.276	4.442	7
6	2.967	3.139	3.313	3.488	3.665	3 842	4 019	4.196	4.371	4.545	6
5	3.01 0	3.187	3.366	3.547	3.729	3 ·913	4.097	4·28 0	4.462	4.643	5
64	3.050	3.232	3.416	3.602	3. 790	3.980	4.170	4.360	4.549	4.738	64
3	3.088	3.274	3.463	3.654	3.848	4.043	4.239	4.435	4.632	4.827	3
2	3.124	3.314	3.507	3.703	3.902	4.102	4.304	4.507	4.710	4.912	2
1	$3.157 \\ 3.188$	$3.351 \\ 3.385$	3.548 3.586	$3.749 \\ 3.791$	$ \begin{array}{r} 3.952 \\ 4.000 \end{array} $	$4.158 \\ 4.210$	4·366 4·423	4·574 4·638	4.783 4.853	4.992 5.068	1 60
60	0.100	0.000		0 / 01							ļ <u> </u>
	81	80	79	78	77	76	75	74	73	72	1

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WHOLE-LIFE PARTICIPATING ASSURANCES.-MALE LIVES.

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Values of Annuities on Two Joint Lives.

x						y					x
*	40	41	42	43	44	45	46	47	48	49	
10	16.909	16.623	16.332	16.031	15.720	15.421	15.106	14.786	14.460	14·13 0	10
1	16.877	16.593	16.303	16.008	15.705	$15 \cdot 398$	15.085	14.766	14.441	14.111	1
2	16.843	16.561	16.003 16.273	15.979	15.679	$15 \cdot 372$	15.061	14 743	14.420	14.092	
3	16.807	16.527	16.241	15.949	15.650	15.345	15.001 15.035	14.719	14.398	14.071	
4	16.768	16.490	16.206	15.915	15000 15.619	15316	15035 15007	14.693	14.373	14.048	4
15	16·72 ₆	16.450	16.168	15.879	15.584	15.284	14.977	14.662	14.347	14.023	1
6	16.6 80	16.407	16.127	15.841	15.548	15.249	14.945	14.634	14.318	13.996	1
7	16.632	16.361	16.084	15.800	15.510	15.213	14.910	14.602	14.287	13.967	'
8	16.581	16.312	16.035	15.756	15.468	15.174	14873	14.567	14.254	13.936	
9	16.526	16.260	15.988	15.709	15.423	15.132	14.834	14.529	14.219	13.903	
50	16.467	16.204	15.935	15.659	15.376	15.087	14.791	14.489	14.181	13.868	2
1	16.405	16.145	15.879	15.606	15.326	15.039	14.746	14.447	14.141	13.830	
2	16.340	16.083	15.820	15.550	15.273	14.989	14.69:	14.402	14.099	13.790	
3	16.270	16.017	15.757	15.490	15.216	14.936	14.648	14.351	14054	13.748	
4	16.197	15.947	15.691	15.428	15.157	14.879	14.595	14.304	14.007	13.703	
25	16.120	15.874	15.621	15.362	15.094	14.820	14.539	14.251	13.957	13.656	2
6	16.039	15.797	15.548	15.292	15.028	14.757	14.479	14.195	13.904	13.606	
7	15.953	15.716	15.471	15.218	14.958	14.691	14.417	14.136	13.848	13.553	
8	15.864	15.631	15.390	15.142	14.886	14.622	14.352	14.075	13.790	13.499	
9	15.770	15.541	15.304	15.061	14.809	14.550	14.283	14.000	13.729	13.441	
30	15.671	15.447	15.215	14.975	14.728	14.473	14.211	13.941	13.664	13.380	8
1	15.567	15.348	15.120	14.886	14.643	$14\ 392$	14.134	13.869	13.59 6	13.317	
2	15.458	15.244	15.022	14.791	14.553	14.308	14.054	13.793	13.524	13.249	
3	15.344	15.134	14.917	14.693	14.459	14.218	13.970	13.713	13.449	13178	ĺ.
4	15.224	15.020	14.808	14.588	14 36 0	14.124	13.881	13.629	13.37 0	13.103	
35	15.097	14.893	14.693	14.478	14.255	14025	13.786	13.54 0	13.286	13.024	3
6	14.965	14.772	14.571	14.363	14.145	13.920	13.687	13.446	13.197	12.940	1
7	14.826	14.639	14.441	14·24 1	14.029	13.810	13.583	13.347	13.103	12.851	
8	14.679	14.498	14.310	14.113	13.907	13.694	13.472	13.242	13.0 04	12.758	
9	14.526	14352	14.169	13.978	13.778	13.571	13.355	13.131	12.899	12.658	
40	14.365	14.196	14.020	13.836	13.642	13.441	$13 \cdot 232$	13.014	12.787	12.553	4
Į	40	14.034	13.864	13.686	13.499	13.304	13.101	12.890	12.669	12.441	
		41	13.701	13.528	13.348	13.160	12.963	12.758	12.545	12.323	
	71		42	13.363	13.189	13.008	12.818	12.620	12.413	12.197	
		70		43	13.023	12.848	12.665	12.473	12·273	12.065	
71 70	$4.117 \\ 4.245$	$\frac{1}{4.381}$	69		44	12680	12.503	12.319	12.126	11.925	4
~	4 240	4.901		68		45	12.334	12.157	11.971	11.777	
39	4.369	4.513	4.654		67		46	11.987	11.808	11.621	ί.
8	4.489	4.642	4.790	4.935		66		47	11.637	11.457	
7	4.602	4.765	4.922	5.075	5.221		65		48	11.285	
6	4.716	4.884	5.049	5.211	5.368	5.521		64		49	
5	4.822	4.999	5.172	5.342	5.507	5.668	5.825		60		
34	4.924	5.108	5.289	5.468	5.642	5.811	5.976	6·136	63	62]
3	5.021	5.213	5.402	5.588	5.770	5.949	6.122	6.290	6'453		
2	5.113	5.312	5.509	5.703	5.894	6.080	6.262	6.439	6.610	6.777	6
1	5·20 0	5.407	5.611	5.813	6.011	6.206	6.396	6.582	6.762	6.937	
30	5.283	5.496	5.708	$5\ 917$	6.151	6.326	6.525	6.719	6.908	7.091	6
	71	70	69	68	67	66	65	64	63	62	

[Ост.

WHOLE-LIFE PARTICIPATING ASSURANCES .---- MALE LIVES.

0[™]

Values of Annuities on Two Joint Lives.

x					y	·				
	50	51	52	53	54	55	56	57	58	59
10	13.794	13.454	13.111	12.763	12.412	12.058	11.702	11.343	10.983	10.623
1	13.778	13.439	13.096	12703 12749	12.412 12.399	12.038 12.046	11702 11.691	11.343 11.333	10.983 10.974	10.025 10.615
2	13.759	13.422	13.080	12.734	12.385	12034	11.679	11.323	10965	10 605
3	13.740	$13\ 403$	13.063	12.719	12.371	12.020	11.667	11.311	10.954	10.595
4	13.718	13.383	13.014	12.701	12.355	12.003	11.653	11.298	10.942	10.282
15	13.695	13.361	13.024	12.682	$12\ 337$	11.988	11.637	11.284	10.929	10.573
6	13.669	13.338	13.002	12.661	12317	11.970	$11\ 621$	11.268	10.914	10.559
7	13.612	13.313	12.978	12.640	12.297	11.951	11.603	11.252	10.899	10.545
8	13.614	13.285	12.953	12.616	12.275	11.931	11.584	11.234	10883	10.230
9	13.582	13.256	$12\ 925$	12.590	12.251	11.908	11.563	11.215	10.865	10.213
20	13.549	13.225	12896	12.562	12.225	11.884	11.540	11.194	10.845	10 495
1	13.513	13.191	12.864	12.533	12.198	11.859	11.516	11171	10.825	10.476
2	13.476	13.156	12.832	12.502	12.169	11.832	11.491	11.148	10.803	10.456
3	13.436	13.119	12.796	12.469	12.100 12.138	11.802 11.803	11.464	11.123	10.779	10.434
4	13.394	13.079	12.759	$12 \cdot 434$	$12 \cdot 103$ $12 \cdot 105$	11.003 11.772	11.404 11.436	11.125 11.097	10.755	10.411
					12.103			11.097		1
25	13.320	13.037	12.720	12.398	12.071	11.740	11.406	11.069	10.729	10.387
6	13.303	12993	12.679	12.359	12.035	11.706	11.374	11.039	10.701	10.362
7	13253	12947	12.632	12.318	11.997	11.671	11.341	11.008	10673	10.332
8	13.202	12.899	12.590	12.276	11.957	11.634	11.307	10.976	10 643	10.307
9	13.148	12.848	12.542	12.231	11.915	11.594	11.270	10.942	10611	10.278
30	13.090	12.794	12.492	12.184	11.871	11.553	11.232	10 906	10.578	10.247
1	13.030	12.737	12.439	12.134	11.825	11.510	11.191	10.869	10.543	10.215
2	12.967	12.678	12 383	12 082	11.776	11.464	11.149	10.829	10.506	10.181
3	12.900	12.615	12.324	12.032 12.027	11.724	11.416	11.104	10.029 10.788	10.468	10 101
4	12.830	12.019 12.549	12.021 12.262	11.969	11.724 11.670	11.366	11.10 ± 11.057	10733 10744	10400 10427	10 107
35	12.755	12.478	12.196	11.907	11.612	11.312	11.007	10.697	10.384	10.067
6	12676	12.405	$12 \cdot 130$ $12 \cdot 127$	11.307 11.842	11.012 11.552	11.312 11.255	10.954	10.037 10.648	10.338	10.025
7	12.593	$12 405 \\ 12 \cdot 326$								9.980
8	12.593 12.501		12.053	11 773	11.487	11.195	10.898	10.596	10.290	
9	12.501 12.411	$12 \cdot 243 \\ 12 \cdot 155$	$11.975 \\ 11.892$	11·700 11·622	11.418 11.346	$11.131 \\ 11.063$	10.838 10.775	$10.540 \\ 10.482$	$10.238 \\ 10.184$	9.932 9.881
10										
40 1	12.311	12.061	11.804	11.539	11.268	10990	10.707	10418	10.125	9.827
	12.205	11.961	11.710	11.451	11.185	10.913	10.632	10.351	10.062	9769
2	12.093	11.855	11.610	11.357	11.097	10.831	10.558	10.279	9.995	9.707
3	11.975	11.743	11.504	11.257	11.604	10743	10.476	10.203	9.924	9.641
4	11.848	11.624	11.391	11.151	10.904	10.649	10.388	10.121	9.848	9.570
45	11.715	11.497	11.272	11.039	10.797	10.549	10.294	10 033	9 766	9.494
6	11.575	11.364	11.146	10.919	10.685	10.443	10.192	9.940	9.679	9.413
7	11.426	11.223	11.012	10.792	10.565	10.330	10.089	9.841	9 586	9 326
8	11.270	11.074	10.870	10.658	10.438	10.211	9.976	9.735	9.487	9 233
9	11.105	10.917	10.720	10.516	10.304	10.084	9.857	9 622	9.381	9.135
50	10.933	10.752	10.564	10 367	10.162	9.950	9 730	9.503	9.270	9.030
	50	10.579	10 398	10 209	10.013	9.808	9.596	9.377	9.151	8.918
		51	10.000 10.225	10.041	9.856	9.659	9 455	9.244	9.025	8.801
		- 01	10 220	9 871	9.690	9.502	9.306	9.103	8.892	8.675
				0011	9.518	9.337	9.150	8.955	8.752	8.544
	1						8.986	8.799	8.605	8 404
	6-	1	1	1		9.165			8.451	8.258
	61			1			8.815	8.636		
01	F .102	60						8.467	8.289	8.105
61	7.106	<u> </u>	-						8.121	7.945
60	7.268	7.440							_	7.778
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WHOLE-LIFE PARTICIPATING ASSURANCES.-MALE LIVES.

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Values of Annuities on Two Joint Lives. $2\frac{3}{4}$ per-cent.

x 60 61 62 63 64 65 66 67 68 69 10 10:264 9:801 9:542 9:183 8:827 8:428 8:118 7:777 7:432 7:094 1 10:246 9:805 9:535 9:178 8:821 8:468 8:118 7:777 7:425 7:091 3 10:237 9:869 9:512 9:157 8:463 8:108 7:762 7:421 7:094 10:216 9:859 9:503 9:148 8:776 8:448 8:066 7:761 7:411 7:075 10:191 9:836 9:442 9:029 8:777 8:427 8:038 7:712 7:384 7:061 20 10:144 9:793 9:442 9:002 8:744 8:397 8:053 7:712 7:375 7:043 10:105 9:701 9:375 9:013 8:355 8:042 7:702 7:367 7:043	x					<i>y</i>				····		
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1 10-254 9:855 9:635 9:178 8:821 8:468 8:118 7:767 7:425 7:087 3 10.237 9:879 9:521 9:164 8:809 8:447 8:108 7:762 7:421 7:084 4 10:227 9:869 9:512 9:157 8:803 8:461 8:102 7:757 7:411 7:075 15 10:216 9:536 9:533 9:148 8:756 8:446 8:066 7:751 7:411 7:057 6 10:024 9:848 9:492 9:129 8:777 8:427 8:081 7:730 7:381 7:051 20 10:144 9:793 9:442 9:092 8'744 8:397 8:053 7:712 7:384 7:001 31 10:127 9:775 9:411 9:664 8:717 8:337 8:031 7:692 7:337 7:023 7:024 7:347 7:017 7:443 7:017 7:443 7:017 7:443 7:012 7:577 7:443 7:012 7:577 7:437 7:037 <td>10</td> <td>10.262</td> <td>9.901</td> <td>9.542</td> <td>9.183</td> <td>8.827</td> <td>8.472</td> <td>8.122</td> <td>7.775</td> <td>7.432</td> <td>7.094</td> <td>ſ</td>	10	10.262	9.901	9.542	9.183	8.827	8.472	8.122	7.775	7.432	7.094	ſ
1 10:246 9:870 0:521 9:111 8:816 8:437 8:113 7:67 7:421 7:084 4 10:227 9:869 9:512 9:157 8:803 8:451 8:102 7:757 7:416 7:079 15 10:216 9:850 9:503 9:148 8:786 8:444 8:006 7:744 7:405 7:064 6 10:011 9:836 9:432 9:129 8:777 8:447 8:089 7:744 7:387 7:398 7:064 6 10:017 9:833 9:442 9:002 8:744 8:395 8:013 7:720 7:384 7:051 20 0:144 9:733 9:442 9:002 8:744 8:395 8:013 7:081 7:037 7:043 1 10:127 9:777 9:427 9:070 8:335 8:013 7:081 7:347 7:017 21 10:035 9:701 9:337 9:013 8:671 8:33												
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6 10.204 9-348 9-483 9-138 8-786 8-436 8 0.89 7.744 7.745 7.065 9 10.161 9-830 9-457 9-106 8-756 8-408 8-063 7.721 7.384 7.061 20 10.144 9-733 9-442 9-002 8-756 8-408 8-053 7.712 7.336 7.043 10.127 9-777 9-787 9-947 9-079 8-731 8-353 8-042 7.702 7.366 7.043 10.105 9-760 9-411 9-064 8-717 8-373 8-031 7.692 7.337 7.026 10.0057 9-721 9-3376 9-031 8-687 8-330 7.992 7.656 7.324 6-992 6 10.021 9-670 9-337 8-975 8-613 8-215 7.947 7.613 7.324 6-9926 6 10-021 9-670 9-337 8-9758 8-636 8-298 7.962 7.643 7.324 6-9926 9 9-933 8-505 8-1	4	10.227	9.869	9.912	9.157	8.803	8.421	8.102		7.416	7.079	
7 10.191 9-386 9-428 9-129 8-777 8-427 8-081 7-738 7-398 7-064 9 10-161 9-809 9-457 9-106 8-756 8-408 8-063 7-721 7-384 7-051 20 10-144 9-793 9-427 9-079 8-744 8-397 8-053 7-712 7-366 7-035 21 10-105 9-760 9-411 9-064 8-717 8-335 8-042 7-702 7-366 7-035 21 10-057 9-741 9-376 9-031 8-657 8-345 8-006 7-669 7-336 7-007 25 10-045 9-701 9-357 9-031 8-671 8-335 8-006 7-664 7-312 6-966 6 10-021 9-679 9-337 8-995 8-631 8-315 7-977 7-643 7-312 6-986 7 9-986 9-581 9-246 8-911 8-575 8-242 7-912 7-584 7-226 6-932 9-393 9-9149 9-38				9.203					7.751	7.411		
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9 10-161 9-809 9-457 9-106 8-756 8-408 8-063 7-721 7-384 7-051 20 10-144 9-793 9-442 9-079 8-731 8-385 8-033 7-702 7-366 7-033 2 10-108 9-760 9-411 9-079 8-717 8-373 8-031 7-692 7-367 7-026 3 10-025 9-760 9-411 9-064 8-717 8-373 8-031 7-692 7-387 7-026 4 10-067 9-721 9-357 9-013 8-671 8-330 7-992 7-656 7-324 6-996 6 10-021 9-679 9-337 8-995 8-651 8-315 7-977 7-643 7-312 6-985 9 9-663 9-234 8-955 8-617 8-281 7-947 7-615 7-228 6-962 9 9-543 9-607 9-246 8-911 8-577 8-244 7-912<	8	10.177	9.823	9.470	9.118	8.767	8.418	8.072	7.730	7.391	7.057	ł
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3 9·820 9·493 9·165 8·837 8·509 8·181 7·855 7·531 7·210 6·892 4 9·785 9·461 9·135 8·809 8·483 8·158 7·834 7·512 7·192 6·876 35 9·748 9·427 9·104 8·780 8·427 8·133 7·811 7·491 7·173 6·859 6 9·709 9·391 9·071 8·750 8·429 8·108 7·738 7·470 7·154 6·811 7 9·667 9·322 9·935 8'717 8·399 8·080 7·736 7·447 7·173 6·822 9 9·576 9·268 8·958 8·646 8·334 8·021 7·709 7·397 7·088 6'781 40 9·526 9·222 8·915 8·607 8·298 7·988 7·678 7·370 7·063 6·784 9·472 9·172 8·869 8·565 8·298 7·914 7·611 7·309 7·007 6·708 9·931 9·001 8·712 <th< td=""><td>1</td><td>9.885</td><td>9.553</td><td>9.220</td><td>8.887</td><td>8.555</td><td>8.224</td><td>7.894</td><td>7.567</td><td>7.243</td><td>6.921</td><td></td></th<>	1	9.885	9.553	9.220	8.887	8.555	8.224	7.894	7.567	7.243	6.921	
3 9·820 9·493 9·165 8·837 8·509 8·181 7·855 7·531 7·210 6·892 4 9·785 9·461 9·135 8·809 8·483 8·158 7·834 7·512 7·192 6·876 35 9·748 9·427 9·104 8·780 8·427 8·133 7·811 7·491 7·173 6·859 6 9·709 9·391 9·071 8·750 8·429 8·108 7·738 7·470 7·154 6·811 7 9·667 9·322 9·935 8'717 8·399 8·080 7·736 7·447 7·173 6·822 9 9·576 9·268 8·958 8·646 8·334 8·021 7·709 7·397 7·088 6'781 40 9·526 9·222 8·915 8·607 8·298 7·988 7·678 7·370 7·063 6·784 9·472 9·172 8·869 8·565 8·298 7·914 7·611 7·309 7·007 6·708 9·931 9·001 8·712 <th< td=""><td>2</td><td>9.853</td><td>9524</td><td>9193</td><td>8.863</td><td>8.532</td><td>8.203</td><td>7.875</td><td>7.549</td><td>7.227</td><td>6.907</td><td></td></th<>	2	9.853	9524	9193	8.863	8.532	8.203	7.875	7.549	7.227	6.907	
4 9.785 9.461 9.135 8.809 8.483 8.158 7.834 7.512 7.192 6.876 35 9.748 9.427 9.104 8.780 8.457 8.133 7.811 7.491 7.173 6.859 6 9.709 9.391 9.071 8.750 8.429 8.108 7.788 7.470 7.154 6.859 7 9.667 9.352 9.035 8.717 8.399 8.080 7.763 7.447 7.133 6.8222 8 9.623 9.312 8.998 8.683 8.364 8.021 7.709 7.397 7.063 6.7581 40 9.526 9.222 8.915 8.607 8.298 7.988 7.678 7.370 7.063 6.758 1 9.472 9.172 8.869 8.555 8.259 7.952 7.646 7.340 7.936 6.976 6.680 4 9.287 9.001 8.712 8.419 8.125 7.830 7.534 7.238 6.943 6.649 45 9.	3	9.820			8.837	8.509		7.855				ł
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	4				8.809		8.158	7.834				
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	35	9.748	9.427	9/104	8.780	8.457	8·133	7.811	7.491	7.173	6.859	
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$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	40	0.596	0.999	8:015	8.607	8.906	7.088	7.678	7.350	7:063	6.759	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$												
3 9·353 9·062 8·768 8·471 8·173 7·874 7·574 7·275 6·976 6·680 4 9·287 9·001 8·712 8·419 8·125 7·830 7·534 7·275 6·976 6·680 45 9·217 8·936 8.651 8·364 8·074 7·783 7·491 7·198 6·907 6·617 6 9·142 8·866 8·586 8·304 8·019 7·732 7·444 7·156 6·868 6·581 7 9·061 8·791 8·517 8·240 7·960 7·678 7·395 7·110 6·827 6·543 8 8·974 8·711 8·433 8·171 7·896 7·619 7·341 7·009 6·733 6·458 50 8·785 8·534 8·278 8·019 7·7567 7·418 7·155 6·891 6·626 6·566 6·306 3·452 8·233 8·091 7·857 7·418 7·155 6·891 6·626 6·566 6·306 3 8·452 8·233 8·091 <t< td=""><td></td><td></td><td></td><td></td><td>0.500</td><td>0.209</td><td>7.014</td><td></td><td></td><td></td><td></td><td></td></t<>					0.500	0.209	7.014					
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9 8·882 8·625 8·363 8·097 7·828 7·556 7·283 7·009 6·733 6·458 50 8·785 8·534 8·278 8·019 7·756 7·490 7·222 6·952 6·682 6·411 1 8·680 8·436 8·188 7·935 7·678 7·418 7·155 6·891 6·626 6·360 2 8·570 8·333 8·091 7·845 7·595 7·341 7·084 6·826 6·566 6·306 2 8·570 8·333 8·091 7·845 7·595 7·341 7·084 6·826 6·566 6·306 3 8·452 8·223 7·989 7·749 7·506 7·259 7·009 6·756 6·502 6·247 4 8·328 8·107 7·880 7·648 7·412 7·171 6·928 6·681 6·433 6·184 55 8·197 7·984 7·765 7·540 7·311 7·078												
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$												
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	9	8.882	8.625	8.363	8.097	7.828	7.556	7.283	7.009	6.733	6.458	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			8.534				7.490°			6.682	6.411	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$			8.436	8.188			7.418		6 [.] 891			
8 8:452 8:223 7:989 7:749 7:506 7:259 7:009 6:756 6:502 6:247 4 8:328 8:107 7:880 7:648 7:412 7:171 6:928 6:681 6:433 6:184 55 8:197 7:984 7:765 7 540 7:311 7:078 6:841 6:602 6:360 6:116 6 8:060 7:854 7:643 7:427 7:205 6:979 6:750 6:517 6:282 6:044 7 7:915 7:718 7:515 7:307 7:093 6:874 6:652 6:427 6:198 5:968 8 7:763 7:575 7:380 7:180 6:974 6:764 6:520 6:331 6:110 5:886 9 7:604 7:425 7:239 7:047 6:850 6:648 6:441 6:230 6:016 5:799		8.570	8 333				7.341	7.084	6.826	6.266		
4 8·328 8·107 7·880 7·648 7·412 7·171 6·928 6·681 6·433 6·184 55 8·197 7·984 7·765 7 540 7·311 7·078 6·841 6·602 6·360 6·116 6 8·060 7·854 7·643 7·427 7·205 6·979 6·750 6·517 6·282 6·044 7 7·915 7·718 7·515 7·307 7·093 6·874 6·652 6·427 6·198 5·968 8 7·763 7·575 7·380 7·180 6·974 6·764 6·550 6·331 6·110 5·886 9 7·604 7·425 7·239 7·047 6·850 6·648 6·441 6·230 6·016 5·799								7.009	6.756	6.502	6.247	
6 8·060 7·854 7·643 7·427 7·205 6·979 6·750 6·517 6·282 6·044 7 7·915 7·718 7·515 7·307 7·093 6·874 6·652 6·427 6·198 5·968 8 7·763 7·575 7·380 7·180 6·974 6·764 6·550 6·331 6·110 5·886 9 7·604 7·425 7·239 7·047 6·850 6·648 6·441 6·230 6·016 5·799	4											
6 8·060 7·854 7·643 7·427 7·205 6·979 6·750 6·517 6·282 6·044 7 7·915 7·718 7·515 7·307 7·093 6·874 6·652 6·427 6·198 5·968 8 7·763 7·575 7·380 7·180 6·974 6·764 6·550 6·331 6·110 5·886 9 7·604 7·425 7·239 7·047 6·850 6·648 6·441 6·230 6·016 5·799	55	8.197	7.984	7.765	7 540	7.311	7.078	6.841	6.602	6.360	6.116	
7 7·915 7·718 7·515 7·307 7·093 6·874 6·652 6·427 6·198 5·968 8 7·763 7·575 7·380 7·180 6·974 6·764 6·550 6·331 6·110 5·866 9 7·604 7·425 7·239 7·047 6·850 6·648 6·441 6·230 6·016 5·799												
8 7.763 7.575 7.380 7.180 6.974 6.764 6.550 6.331 6.110 5.886 9 7.604 7.425 7.239 7.047 6.850 6.648 6.441 6.230 6.016 5.799												
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WHOLE-LIFE PARTICIPATING ASSURANCES .--- MALE LIVES.

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Values of Annuities on Two Joint Lives.

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x	70	71	72	73	74	75	76	77	78	79	
10	6.761	6·4 34	6.114	5.800	5.494	5.195	4.904	4.622	4.348	4.083	
1	6.758	6.432	6.112	5.300 5.798	5.492	5.191	4.904 4.903	4.621	4.347	4.082	'
2	6.755	6.429	6.109	5.796	5.490	5.191 5.192	4.903 4.901	4.619	4.346	4.081	
ŝ	6.752	6.425	6.105	5790 5794	$5490 \\ 5488$	5.192 5.190	4.901	4.618	4.345	4.081 4.080	1
4											
*	6.748	6.423	6.104	5.791	5.486	5.188	4.898	4·6 16	4.343	4.078	
15	6.744	6'419	6.100	5.788	5.483	5.186	4.896	4.614	4.341	4.077	
6	6.739	6.412	6.096	5.785	5.480	5.183	4.893	4.612	4.339	4.075	
7	6.734	6.110	6.092	5.781	5.477	5.180	4.891	4.610	4.337	4.074	
8	6.728	6.402	6.088	5.777	5.473	5.177	4.888	4607	4.335	4.072	Ì.
9	6.722	6•399	6.083	5.772	5.469	5.173	4.885	4.601	4.333	4.069	l
20	6·715	6.393	6.077	5.767	5.461	5.169	4.881	4 .601	4.330	4.067	
1	6.708	6.386	6.071	5.762	5.460	5.165	4.877	4.598	4.326	4.061	
2	6.700	6.379	6.065	5.756	5.451	5.160	4.873	4.594	4.323	4.061	L
ŝ	6.691	6.371	6.058	5.750	5.449	5.155	4.868	4.590	4.320	4.058	
4										4.054	
4	6.682	6 •363	6.020	5.743	5.443	5.149	4.863	4.282	4 ·316	4.094	
25	$6\ 673$	6.352	6.043	5.736	5.436	5144	4.858	4.581	4.312	4.051	
6	6.663	6.346	6.034	5.728	5.430	5.137	4.853	4.576	4307	4.047	L
7	6.652	6.336	6.025	5.720	5.422	5.131	4.847	4.571	4.307	4.042	
8	6.641	6.326	6.016	5.712	5.415	5.124	4.841	4.565	4.298	4.038	
9	6.630	6.315	6.007	5.704	5.407	5.117	4.832	4.560	4.293	4.034	
80	6 618	6.304	5.997	5.695	5.399	5.110	4828	4.554	4.287	4.029	
1	6 605	6.293	5.986	5.685	5.391	5.102	4.821	4.548	4.282	4.024	1
2	6.592	6.281	5.975	5.675	5.382	5.091	4.814	4.241	$\hat{4} \cdot 276$	4019	
3	6.578	6.268	5.964	5.665	5.372	5.086	4.807	4.234	4.270	4.014	1
4	6.263	6^{-255}	5.952	5.654	5.363	5.077	4.799	4.527	4.264	4.008	
85	6.548	6.241	5.939	5.643	5.959		4.790	4.590	4 ·257	4.002	
6	6.532	6.241 6.226	5939 5926		5.352	5 068		4.520	4.250	3.996	1
7	6.532 6.515		5.920 5.912	5.631	5.342	5.058	4.782	4.512	$4^{\circ}250$ $4^{\circ}243$	3.989	
8		6·211		5.618	5.330	5.048	4.773	4.504			
9	6·497 6·477	$6.195 \\ 6.177$	$5.898 \\ 5.882$	5•605 5•591	5·318 5·306	$5.037 \\ 5.026$	$4.763 \\ 4.753$	4·495 4·486	$4.235 \\ 4.227$	$3.982 \\ 3.975$	
											1
40	6:457	6.159	5.865	5.576	5·2 92	5.014	4.742	4:477	4.218	3.968	
1	6.432	6.139	5.847	5.559	5.277	5.001	4.730	4.466	4.209	3.959	
2	6·411	6.112	5.828	5.542	5.262	4.987	4.717	4.455	4.199	3·9 50	1
3	6.385	6.094	5.807	5.523	5.245	4.971	4.704	4.443	4.188	3.941	
4	6.328	6 •069	5.784	5.203	5·2 26	4.955	4.689	4.430	4.177	3.931	
45	6.328	6.042	5.760	5.481	5.207	4.938	4.674	4.416	4.161	3.919	
6	6.296	6.013	5.734	5.458	5.186	4.919	4.657	4.400	4.150	3 907	
7	6.262	5.952	5.706	5.432	5.163	4 898	4.635	4.384	4.136	3.891	
8	6.225	5.919	5.675	5.405	5.138	4.876	4.618	4.366	4.120	3.88 0	
9	6.184	5.912	5.642	5.375	5.111	4.852	4.597	4.347	4.103	3.862	
=0	6.141	5.873	5.607	5.343			4.573	4.326	4 [.] 084	3.848	
50	6·141 6·095	5.831	5.207 5.268	5·343 5·308	5·082	4.826			4.084	3.830	
1					5051	4.797	4.548	4.303		3.811	
2	6·045	5·785	5.527	5.271	5.017	4.767	4.521	4.279	4.042	3.790	
8	5.991	5.736	5.483	5.230	4.981	4.734	4.491	4.252	4.018		
4	5.934	5684	5.432	5.187	4.942	4.699	4.459	4.224	3.993	3.767	
55	5.872	5.627	5.383	5.140	4·89 9	4 ·661	4.425	4.193	3.965	3.742	1
67	5·8 06	5.567	5.328	5.090	4.851	4.620	4.388	4.160	3.932	3.715	
	5.735	5.502	5.270	5.037	4.805	4576	4.348	4.124	3.903	3.687	1
8	5.660	5.434	5.206	4.979	4.753	4.528	4.302	4.085	3.868	3.652	
9	5.581	5.360	5.139	4.918	4.697	4.477	4.259	4.044	3.831	3.622	
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WHOLE-LIFE PARTICIPATING ASSURANCES.-MALE LIVES.

Values of Annuities on Two Joint Lives.

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	80	81	82	83	84	85	86	87	88	89	x
10	3.827	3.580	3 ·343	3.116	2.897	2.689	2.490	2.301	2.121	1.951	10
1	3.826	3.529	3·3 43	3.110	2.897	2.688	2.490		2.121	1951	1
2	3.825	3.579	3.342	3.110	2.896	2.688	2.489	2.300	$2 \cdot \hat{1} \hat{2} \hat{1}$	1.951	2
3	3.824	3.578	3.341	3.114	2.896	2.687	2.489	2.300	2.121	1.950	3
4	3.823	3.577	3.340	3.113	2.895	2.687	2.489	2.299	2.120	1.950	4
15	3.823	3.576	3·339	3 ·112	2.894	2.686	2.483	2.209	2.120	1.950	15
6	3.820	3.574	3.338	3.112 3.111	2.893	2.685	2.485 2.487	$\frac{2}{2} \cdot 298$	$\frac{2}{2}\cdot 119$	1.949	6
7	3.819	3.573	3.337	$3.111 \\ 3.110$	2.893	2.685 2.685	2.407 2.487	2.298	$\frac{2}{2}\cdot 119$	1.949 1.949	7
8	3.817	3.572	3.335	3.103	2.893 2.891	2.681	2487 2486	2.297	2.113 2.118	1.948	8
9	3.815	3.570	3.334	3.103	$2^{.891}$ $2^{.890}$	2.681 2.683	$2430 \\ 2485$	2.296	$2.113 \\ 2.117$	1.948 1.948	6
		ļ									
20	3.813	3.568	3.332	3.106	2.889	2.681	2.481	2.295	2.117	1.947	20
1	3.810	3.566	3.3.0	3.104	2.887	2.680	2.483	2.294	2.116	1.946	1
2	3.808	3.563	3.328	3.103	2.886	2.679	2.484	2.293	2.115	1.946	8
3	3.805	3.561	3.326	3.101	2.881	2.677	2.480	2.292	2.114	1.945	4
4	3.803	3.228	3.324	3.098	2.882	2.676	2.479	2.291	2.113	1.944	4
25	3.799	3· 555	3.321	3.096	2880	2.671	2.477	2.290	2.112	1.943	25
6	3.793	3.552	3.318	3.094	2.878	2672	2.476	2.288	2·11 0	1.942	6
7	3.791	3·519	3.312	3.091	2.876	2.670	2.474	2.287	2.109	1.941	7
8	3 788	3.545	3.312	3.089	2.874	2.668	2.472	2.285	2.108	1.939	8
9	3.783	3.542	3.309	3.086	2.871	2 ·066	2.470	2.283	2.106	1.938	9
30	3.779	3.538	3.306	3.083	2.869	2.663	2.468	2.281	2.105	1.937	30
1	3.775	3.534	3.305	3.080	2.866	2.661	2.466	2.280	2.103	1.935	1
2	3.770	3.530	3.530	3.076	2.863	2.659	2.464	2.278	2.101	1.934	2
3	3.765	3.526	3.292	3.073	2.860	2.656	2.462	2.276	2.100	1.932	3
4	3.761	3.521	3.291	3.070	2.857	2.623	$2^{,}459$	2.274	2.098	1.931	4
35	3.755	3.517	3.287	3.066	2.854	2.650	2.457	2.272	2.096	1929	35
6	3.750	3.512	3.283	3.062	2.850	2.648	$2^{.}454$	2.269	2.094	1.927	6
7	3.744	3.507	3.278	3.058	2.847	2.644	2.451	2.267	2.092	1.926	7
8	3.738	3.501	3.273	3.021	2.843	2·641	2.449	2.264	2.090	1924	8
9	3.732	3 ·496	3.268	3.020	2.839	2.638	2.416	2.262	2.087	1.922	9
40	3.725	3.490	3.263	3.043	2.835	2.634	2.442	2.259	2.085	1.920	40
1	3.717	3.483	3.257	3.040	2.831	2.630	2.439	2.256	2.082	1.917	1
2	3 709	3.476	3.251	3.034	2.826	2.626	2.435	2.253	2.080	1.915	2
3	3.701	3.469	3.245	3.029	2.821	2.623	2.431	$2 \cdot 249$	2.077	1 912	3
4	3.692	3.460	3.237	3.022	2.815	2.617	2.427	2.246	2073	1.910	4
45	3.682	3.422	3.230	3.016	2.809	2.612	2.423	2.242	2.070	1.907	45
6	3.671	3.442	3.221	3.008	2·803	2.606	2.420 2.418	2.237	2.066	1.903	6
7	3.660	3.432	3.212	3.000	2.005 2.796	2.000 2.600	2.410 2.412	2.233	2.062	1.900	1
8	3.647	3.421	3.202	2.992	2.788	2.000 2.593	2.406	2.228	2.058	1.896	6
9	3.633	3.409	3.192	2.982	2.780	2.586	2.400	2.222	2.053	1.892	E
50	3.619	3.396	3·1 80	2.972			2.393	2.216	2.048	1.887	50
1	3 603	3.382	$3.160 \\ 3.168$	2.972 2.961	$2.771 \\ 2.761$	$2.578 \\ 2.569$	2.395 2.386	$2210 \\ 2.209$	2.043	1.882	1
2	3.003 3.286	3.366	$3.103 \\ 3.154$	2.961 2.949	2.761 2.751	2.569 2.560	2.380 2.378	$2 \cdot 209$ $2 \cdot 202$	2.042 2.036	1.802 1.877	
ŝ	3.567	3.320	3.134	2.949 2.936	2.731 2.739	2.550	2.369	$\frac{2}{2}.195$	2.030 2.029	1.871	
4	3.546	3.332	3.139 3.123	2.930 2.922	$\frac{2.739}{2.727}$	2.530	2.359	2.195 2.186	2.029	1.865	
	3.524	3.312	3.106	2.906				2.177	2.014	1.857	5
55	3.524 3.501	$3^{\circ}291$	3.087		2.713	2.527	2·349		2.014 2.005	1.850	6
6 7	3.901 3.475	3.291	3.087	2.890	2.699	2.514	2.337	2.167	1.996		
8	3.447	3.243	3.042	2.872	2.683	2.500	2.325	$2.156 \\ 2.145$		$1.842 \\ 1.833$	É
9	3.447 3.417	$3^{\circ}243$ $3^{\circ}216$	3.045	$2.852 \\ 2.831$	$2.666 \\ 2.647$	$2.485 \\ 2.469$	$2.312 \\ 2.297$	$2.145 \\ 2.132$	$1.985 \\ 1.974$	1.823	
	~										
	08	81 17/S002020	82	83.	84	L 85.	. 86	87	88	89	1

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WHOLE-LIFE PARTICIPATING ASSURANCES .--- MALE LIVES.

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Values of Annuities on Two Joint Lives.

\boldsymbol{x}						y		r	-)	·
	90	91	92	93	94	95	96		98	99	100	101	ļ
10	1.790	1.639	1.494	1.362	1.234	1.120	1 007	·916	$\cdot 825$.702	$\cdot 550$	$\cdot 323$	
1	1.789	1.639	1.494	1.362	1 234	1.120	1.007	·916	·825	.702	.550	$\cdot 323$	ł
2	1.789	1.638	1.494	1.302 1.362	1.234 1.233	1.120 1.120	1.007	·916	.825	.702	.550	·323	L
ŝ		1.638										$\cdot 323$	ļ
3 4	1.789		1.494	1.362	1.233	1.120	1.007	·916	.825	.702	·550		L
4	1.789	1.638	1.493	1.362	1.233	1.120	1.007	·915	·825	•701	•550	$\cdot 323$	
15	1.788	1.638	1.493	1.362	1.233	1.119	1.007	·915	·825	.701	•550	·323	
6	1.788	1.637	1.493	1.361	1.233	1.119	1.007	·915	·825	.701	·550	$\cdot 323$	L
7	1.788	1637	1.493	1.361	1.233	1.119	1.006	·915	·825	·701	·550	$\cdot 323$	
8	1.787	1.637	1.492	1.361	1.232	1.119	1.006	·915	·825	.701	·550	·323	
9	1.787	1.636	1.492	1.360	1.232	1.119	1.006	$\cdot 915$	·824	•701	•550	$\cdot 323$	
20	1.786	1.636	1.492	1.360	1.232	1.118	1.006	·915	·824	.701	•550	$\cdot 323$	
1	1.785	1.635	1.491	1.360	1.231	1.118	1.006	·914	·824	.701	.550	$\cdot 323$	ł
2	1.785	1.632	1.491	1.359	1.231	1.118	1.005	·914	·824	701	$\cdot 549$	$\cdot 323$	
3	1.784	1.634	1.490	1.359	1.231	1.117	1.005	·914	·824	700	.549	.323	ł
4	1.783	1.633	1.489	1.358	1.230	1.117	1.002	·914	.823	·700	·549	·323	1
25	1.782	1.632	1.489	1.358	1.230	1.117	1.004	·913	.823	·700	·549	$\cdot 323$	
6	1.781	1.632	1.488	1.350 1.357	$1.230 \\ 1.229$	1.110 1.110	1.004	.913	·823	.700	.549	.323	1
7	1.780	1.631	1.487	1.356	$1229 \\ 1.229$	1.110 1.116	1.003	.913	·823	.700	.549	323	L
8	1.779	1.630	1.486	1.350 1.356	$1229 \\ 1.228$	1.115	1 003	·912	$\cdot 822$.699	$\cdot 549$.323	L
9	1.778	1.630	1.480 1.486	1.355	$1.228 \\ 1.227$	$1.115 \\ 1.115$	1.003	·912	.822	.699	·548	·323	
~~													
30	1.777	1.628	1.485	1354	1.227	1.114	1.002	·911	$\cdot 822$	·699	•548	$\cdot 322$	
1	1.776	1.627	1.484	1.353	1.226	1.113	1.002	·911	$\cdot 821$	·699	·548	$\cdot 322$	l
2	1.775	1.626	1.483	1.323	1.225	1.113	1.001	·911	.821	·698	.548	$\cdot 322$	L
3	1.773	1.625	1.482	1.352	1.225	1.112	1.001	·910	$\cdot 821$.698	·548	$\cdot 322$	L
4	1.772	1.623	1.481	1.351	1.224	1.112	1.000	·910	·820	·698	•548	$\cdot 322$	
35	1.770	1.622	1.480	1.350	1.223	1.111	•999	·909	·820	·697	•547	$\cdot 322$	
6	1.769	1.621	1.479	1.349	1.222	1 1 1 1 0	·999	·909	$\cdot 819$	·697	•547	$\cdot 322$	ł
7	1.767	1.619	1.477	1.348	1.221	1.109	.998	·908	$\cdot 819$	•697	.547	$\cdot 322$	ł
8	1.766	1.618	1.476	1.317	1.220	1.109	·998	.907	·818	•696	547	$\cdot 322$	L
9	1.764	1.617	1.475	1.346	1.220	1.108	•997	•907	·818	·696	$\cdot 546$	$\cdot 322$	
4 0	1.762	1.612	1.474	1.345	1.219	1.107	·996	·906	·817	·696	·546	·321	
1	1.760	1.613	1.472	1.343	1.217	1.106	·995	.906	·817	·695	.546	·321	
2	1.758	1.611	1.471	1342	1.216	1.105	.994	.905	816	·695	.545	$\cdot 321$	
3	1.756	1.609	1.469	1.340	1.210 1.215	1.104	.994	·904	·816	·694	.545	.321	
4	1.753	1.003 1.607	1.467	1.339	1.213	1.101	.993	·903	-815	·694	.545	·321	ł
45	1.751	1.605	1.465	1.337	1.212	1.101	·991	.902	·814	·693	·544	·321	
- <u>+</u> 5 6	1.748	1 603	1.463	1.335	1.212 1.211	1.100	•990	·901	.813	·693	•544	.320	1
7	1.743 1.745	1.603 1.600	1.465	1,999	1.209		·990	·901	-813	.692	•544	.320	ł
8				1.333		1.099	-989		·812 ·811		.543	·320	1
9	1·741 1·738	1.597 1.594	1.458	$1.331 \\ 1.329$	1.207	1.097	·988 ·986	·899 ·898	·811	·691 ·690	·543	·320	
-			1.455		1.205	1.092		1					
50	1.734	1.591	1.453	1 326	1.203	1.093	•985	·896	•809	·690	•542	·320	ļ
1	1.730	1.587	1.449	1.324	1.200	1.091	·983	·895	·808	•689	•541	•319	1
2	1.725	1.583	1.446	1.321	1.198	1.089	981	·893	·807	•688	.541	•319	
3	1.720	1.578	1.442	1.317	1.195	1.087	·979	•892	·805	·686	•540	.319	
4	1.714	1.574	1.438	1.314	1.192	1 084	•977	•890	·804	•685	•539	•318	
55	1.708	1.568	1.433	1.310	1.189	1.081	974	·888	·802	684	·538	·318	1
6	1.702	1.563	1.428	1.306	1.185	1.078	.972	·885	·800	·682	•537	•317	
7	1.695	1.556	1.423	1.301	1.181	1.075	·969	·883	.798	·681	•536	·317	
8	1.687	1.550	1.417	1.296	1.177	1.071	.965	·880	•796	·679	•535	·316	
9	1.678	1.542	1.411	1.290	1.172	1.067	.962	·877	·793	·677	•534	•316	
	90	91	92	93	94	95	96	97	98	99	100	101	-