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.

The method adopted in construction was grounded on that indicated on p. 171 of "Principles and Methods", that is to say :— "Commutation columns were formed, and the annuities then computed from the formula, $\log a_{xy} = \log \mathbb{N}_{x+1:y+1} - \log \mathrm{D}_{xy}$."

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.

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

2 M 2

WHOLE-LIFE PARTICIPATING ASSURANCES.—MALE LIVES.

0^M   *Values of Annuities on Two Joint Lives.*   2¾ **per-cent.**

x	10	11	12	13	14	15	16	17	18	19	x
10	22·778	22·669	22·554	22·434	22·307	22·174	22·034	21·890	21·738	21·579	10
	10	22·564	22·451	22·334	22·210	22·080	21·944	21·802	21·653	21·498	1
		11	22·342	22·228	22·107	21·981	21·847	21·708	21·562	21·410	2
	101		**12**	22·117	21·999	21·875	21·745	21·609	21·467	21·318	3
		100		**13**	21·885	21·764	21·637	21·504	21·365	21·219	4
101	·108		**99**		**14**	21·647	21·522	21·393	21·257	21·115	15
100	·139	·198		**98**		**15**	21·402	21·276	21·144	21·005	6
99	·151	·222	·254		**97**		**16**	21·154	21·025	20·890	7
8	·162	·240	·277	·305		**96**		**17**	20·900	20·768	8
7	·168	·251	·291	·322	·340		**95**		**18**	20·640	9
6	·176	·264	·308	·341	·361	·383		**94**		**19**	
5	·187	·282	·330	·366	·388	·413	·445		**93**		
94	·195	·297	·349	·388	·413	·439	·475	·506		**92**	
3	·204	·313	·370	·413	·439	·469	·507	·541	·580		
2	·212	·327	·389	·435	·464	·495	·536	·574	·615	·654	92
1	·220	·342	·408	·458	·489	·523	·567	·608	·652	·694	1
90	·227	·356	·426	·479	·513	·549	·596	·640	·688	·733	90
89	·234	·369	·444	·501	·537	·576	·626	·672	·724	·773	89
8	·240	·382	·461	·521	·560	·601	·654	·704	·758	·811	8
7	·247	·393	·477	·540	·582	·625	·681	·734	·792	·848	7
6	·252	·404	·492	·559	·603	·649	·708	·764	·825	·885	6
5	·258	·415	·507	·577	·623	·672	·733	·792	·857	·920	5
84	·263	·425	·520	·594	·643	·694	·758	·820	·888	·955	84
3	·267	·434	·533	·610	·661	·714	·782	·846	·918	·988	3
2	·272	·443	·546	·625	·679	·734	·804	·871	·946	1·020	2
1	·276	·451	·557	·639	·695	·753	·825	·895	·973	1·050	1
80	·280	·458	·568	·653	·711	·771	·845	·918	·999	1·079	80
79	·283	·465	·578	·665	·726	·787	·865	·940	1·024	1·107	79
8	·286	·472	·587	·677	·739	·803	·883	·960	1·047	1·133	8
7	·289	·478	·596	·688	·752	·818	·900	·980	1·069	1·158	7
6	·292	·484	·604	·699	·765	·832	·916	·998	1·090	1·181	6
5	·294	·489	·611	·708	·776	·845	·930	1·015	1·109	1·203	5
74	·297	·494	·618	·717	·786	·857	·944	1·031	1·128	1·224	74
3	·299	·498	·625	·725	·796	·868	·958	1·046	1·145	1·244	3
2	·301	·502	·631	·733	·805	·879	·970	1·060	1·161	1·262	2
1	·303	·506	·636	·740	·814	·888	·981	1·073	1·176	1·279	1
70	·304	·510	·642	·747	·822	·897	·992	1·085	1·190	1·295	70
69	·306	·513	·646	·753	·829	·906	1·001	1·096	1·203	1·310	69
8	·307	·516	·651	·759	·836	·914	1·011	1·107	1·215	1·324	8
7	·309	·519	·655	·764	·842	·921	1·019	1·117	1·226	1·337	7
6	·310	·521	·658	·769	·848	·928	1·027	1·126	1·237	1·349	6
5	·311	·523	·662	·773	·853	·934	1·034	1·134	1·246	1·360	5
64	·312	·526	·665	·777	·858	·940	1·041	1·142	1·255	1·370	64
3	·313	·527	·668	·781	·862	·945	1·047	1·149	1·263	1·380	3
2	·314	·529	·671	·784	·867	·950	1·052	1·155	1·271	1·388	2
1	·314	·531	·673	·788	·870	·954	1·058	1·161	1·278	1·397	1
60	·315	·532	·675	·791	·874	·958	1·063	1·167	1·284	1·404	60
	101	**100**	**99**	**98**	**97**	**96**	**95**	**94**	**93**	**92**	

WHOLE-LIFE PARTICIPATING ASSURANCES.—MALE LIVES.

O^M *Values of Annuities on Two Joint Lives.* **2¾ per-cent.**

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	21·335	21·168	20·994	20·814	20·628	20·436	20·238	20·034	19·826	19·611	1
2	21·251	21·086	20·916	20·738	20·555	20 366	20 171	19·970	19·764	19·552	2
3	21·162	21·001	20·832	20·659	20·478	20 292	20·101	19·902	19·699	19·490	3
4	21·067	20·909	20·744	20·573	20·396	20·213	20 024	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	19·276	6
7	20·748	20·600	20·446	20·285	20·119	19·946	19·767	19·583	19·392	19·196	7
8	20·630	20·485	20·335	20·178	20·015	19·846	19·671	19·490	19 304	19·110	8
9	20 505	20·365	20·218	20·066	19·906	19·741	19·570	19·392	19·209	19·020	9
20	20·374	20·237	20 095	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
		21	19·831	19·690	19·543	19·390	19·230	19·065	18·894	18 716	2
			22	19·553	19·410	19·261	19·106	18·944	18·777	18·604	3
	91			**23**	19·271	19·126	18·975	18·818	18·655	18·486	4
91	·739	**90**			**24**	18·985	18·839	18·686	18·528	18 363	25
90	·781	·827	**89**			**25**	18·696	18·548	18·395	18·234	6
89	·824	·874	·925	**88**			**26**	18·404	18·255	18·099	7
8	·866	·920	·975	1·029	**87**			**27**	18·110	17·959	8
7	·907	·965	1·024	1·083	1·141	**86**			**28**	17·813	9
6	·948	1·010	1·073	1·136	1·198	1·261	**85**			**29**	
5	·987	1·053	1·120	1·188	1·255	1·322	1·388	**84**			
84	1·025	1·095	1·167	1·239	1·310	1·382	1·454	1·524	**83**	**82**	
3	1·062	1·136	1 212	1·288	1·365	1·442	1·518	1·594	1·669		
2	1·098	1·175	1·256	1·336	1·418	1 500	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	1·815	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	1·196	1·285	1·377	1·471	1·566	1·663	1·760	1·858	1·955	2·052	79
8	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	1 809	1·921	2 035	2·149	2·263	6
5	1·305	1·408	1·515	1·625	1·738	1·853	1·970	2·089	2·209	2·329	5
74	1·329	1·434	1·546	1·659	1·776	1·896	2·017	2 141	2·266	2·392	74
3	1·351	1·460	1·574	1·691	1·812	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	1·426	1·546	1·671	1·801	1·936	2·075	2·218	2·364	2·514	2·666	69
8	1·442	1·564	1·692	1·825	1·962	2·105	2·251	2·402	2·556	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
3	1·506	1·637	1·776	1·920	2·070	2·227	2·389	2·557	2·730	2·907	3
2	1·516	1·649	1·789	1·935	2·088	2·247	2·411	2·582	2·758	2·939	2
1	1·526	1·659	1·801	1·949	2·104	2·265	2·432	2·605	2·784	2·968	1
60	1·534	1·669	1·813	1·962	2·118	2·282	2·451	2·627	2·809	2·996	60
	91	90	89	88	87	86	85	84	83	82	

WHOLE-LIFE PARTICIPATING ASSURANCES.—MALE LIVES

O^M —— *Values of Annuities on Two Joint Lives.* **2¾ per-cent.**

x	30	31	32	33	34	35	36	37	38	39	x
10	19·443	19·215	18·981	18·742	18·497	18·247	17·991	17·729	17·461	17·188	10
1	19·391	19·165	18·934	18·697	18·454	18·206	17·952	17·692	17·426	17·155	1
2	19·335	19·112	18·883	18·648	18·408	18 161	17·910	17·652	17·389	17·119	2
3	19·275	19·055	18·828	18·596	18·359	18·115	17·865	17·610	17·348	17·081	3
4	19·211	18·994	18·770	18·541	18·306	18·064	17·817	17·564	17·305	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	18·187	17·951	17·710	17·462	17·208	16·947	6
7	18·993	18·785	18·570	18·350	18·123	17·890	17·651	17·406	17·155	16·897	7
8	18·911	18·706	18·495	18·278	18·054	17·824	17·588	17·346	17·097	16·843	8
9	18·824	18·623	18·415	18·201	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
2	18·532	18·342	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	18·129	17·941	17·747	17·546	17·338	17·123	16·902	16·674	16·439	4
25	18·192	18·015	17·831	17·641	17·445	17·241	17·030	16·814	16·589	16 359	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	16·830	16 621	16·406	16·183	7
8	17·802	17·639	17·469	17·293	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	16 610	16·111	16·205	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

x (left)	30	31	32	33	34	35	36	37	38	39	x (right)
	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	16·415	16·239	16·055	15·864	15·665	2
81			**32**	16·598	16·440	16·275	16·103	15·925	15·739	15·545	3
80				**33**	16·287	16·127	15·961	15·788	15·608	15·420	4
81	1·985				**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
79	2·148	2·243	2·337	**79**			**36**	15·339	15·175	15·004	7
8	2·227	2·328	2·428	2·527	**78**			**37**	15·018	14·853	8
7	2·304	2·411	2·518	2·623	2·726	**77**			**38**	14·691	9
6	2·378	2·492	2·605	2·717	2·827	2·934	**76**			**39**	
5	2·450	2·570	2·689	2·808	2·925	3·040	3·152	**75**			
74	2·519	2·645	2·771	2·897	3·020	3·143	3·262	3·380	**74**	**73**	74
3	2·585	2·718	2·850	2·982	3·113	3·242	3·369	3·494	3·617	**72**	3
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	3·521	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	3·597	3·768	3·938	4·108	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	3·010	3·187	3·366	3·547	3·729	3·913	4·097	4·280	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	3·351	3·548	3·749	3·952	4·158	4·366	4·574	4·783	4·992	1
60	3·188	3·385	3·586	3·791	4·000	4·210	4·423	4·638	4·853	5·068	60
	81	**80**	**79**	**78**	**77**	**76**	**75**	**74**	**73**	**72**	

WHOLE-LIFE PARTICIPATING ASSURANCES.—MALE LIVES.

0^M   *Values of Annuities on Two Joint Lives.*   **2¾ per-cent.**

x	40	41	42	43	44	45	46	47	48	49	x
10	16·909	16·623	16·332	16·034	15·730	15·421	15·106	14·786	14·460	14·130	10
1	16·877	16·593	16·303	16·008	15·705	15·398	15·085	14·766	14·441	14·111	1
2	16·843	16·561	16·273	15·979	15·679	15·372	15·061	14·743	14·420	14·092	2
3	16·807	16·527	16·241	15·949	15·650	15·345	15·035	14·719	14·398	14·071	3
4	16·768	16·490	16·206	15·915	15·619	15·316	15·007	14·693	14·373	14·048	4
15	16·726	16·450	16·168	15·879	15·584	15·284	14·977	14·665	14·347	14·023	15
6	16·680	16·407	16·127	15·841	15·548	15·249	14·945	14·634	14·318	13·996	6
7	16·632	16·361	16·084	15·800	15·510	15·213	14·910	14·602	14·287	13·967	7
8	16·581	16·312	16·035	15·756	15·468	15·174	14·873	14·567	14·254	13·936	8
9	16·526	16·260	15·988	15·709	15·423	15·132	14·834	14·529	14·219	13·903	9
20	16·467	16·204	15·935	15·659	15·376	15·087	14·791	14·489	14·181	13·868	20
1	16·405	16·145	15·879	15·606	15·326	15·039	14·746	14·447	14·141	13·830	1
2	16·340	16·083	15·820	15·550	15·273	14·989	14·699	14·402	14·099	13·790	2
3	16·270	16·017	15·757	15·490	15·216	14·936	14·648	14·351	14 054	13·748	3
4	16·197	15·947	15·691	15·428	15·157	14·879	14·595	14·304	14·007	13·703	4
25	16·120	15·874	15·621	15·362	15·094	14·820	14·539	14·251	13·957	13·656	25
6	16·039	15·797	15·548	15·292	15·028	14·757	14·479	14·195	13·904	13·606	6
7	15·953	15·716	15·471	15·218	14·958	14·691	14·417	14·136	13·848	13·553	7
8	15·864	15·631	15·390	15·142	14·886	14·622	14·352	14·075	13·790	13·499	8
9	15·770	15·541	15·304	15·061	14·809	14·550	14·283	14·009	13·729	13·441	9
30	15·671	15·447	15·215	14·975	14·728	14·473	14·211	13·941	13·664	13·380	30
1	15·567	15·348	15·120	14·886	14·643	14 392	14·134	13·869	13·596	13·317	1
2	15·458	15·244	15·022	14·791	14·553	14·308	14·054	13·793	13·524	13·249	2
3	15·344	15·134	14·917	14·693	14·459	14·218	13·970	13·713	13·449	13 178	3
4	15·224	15·020	14·808	14·588	14 360	14·124	13·881	13·629	13·370	13·103	4
35	15·097	14·898	14·693	14·478	14·255	14 025	13·786	13·540	13·286	13·024	35
6	14·965	14·772	14·571	14·363	14·145	13·920	13·687	13·446	13·197	12·940	6
7	14·826	14·639	14·441	14·241	14·029	13·810	13·583	13·347	13·103	12·851	7
8	14·679	14·498	14·310	14·113	13·907	13·694	13·472	13·242	13·004	12·758	8
9	14·526	14 352	14·169	13·978	13·778	13·571	13·355	13·131	12·899	12·658	9
40	14·365	14·196	14·020	13·836	13·642	13·441	13·232	13·014	12·787	12·553	40
1	**40**	14·034	13·864	13·686	13·499	13·304	13·101	12·890	12·669	12·441	1
2		**41**	13·701	13·528	13·348	13·160	12·963	12·758	12·545	12·323	2
3			**42**	13·363	13·189	13·008	12·818	12·620	12·413	12·197	3
4				**43**	13·023	12·848	12·665	12·473	12·273	12·065	4
45					**44**		12·680	12·319	12·126	11·925	45
6						**45**	12·503	12·157	11·971	11·777	6
7							12·334	11·987	11·808	11·621	7
8							**46**		11·637	11·457	8
9								**47**		11·285	9

Lower triangle (x = 71 … 60):

x	40	41	42	43	44	45	46	47	48	49	x
71	4·117										71
70	4·245	4·381									70
69	4·369	4·513	4·654								69
8	4·489	4·642	4·790	4·935							8
7	4·605	4·765	4·922	5·075	5·221						7
6	4·716	4·884	5·049	5·211	5·368	5·521					6
5	4·822	4·999	5·172	5·342	5·507	5·668	5·825				5
64	4·924	5·108	5·289	5·468	5·642	5·811	5·976	6·136			64
3	5·021	5·213	5·402	5·588	5·770	5·949	6·122	6·290	6·453		3
2	5·113	5·312	5·509	5·703	5·894	6·080	6·262	6·439	6·610	6·777	2
1	5·200	5·407	5·611	5·813	6·011	6·206	6·396	6·582	6·762	6·937	1
60	5·283	5·496	5·708	5 917	6·121	6·326	6·525	6·719	6·908	7·091	60
	71	70	69	68	67	66	65	64	63	62	

WHOLE-LIFE PARTICIPATING ASSURANCES.—MALE LIVES.

O^M *Values of Annuities on Two Joint Lives.* **2¾ per-cent.**

x	50	51	52	53	54	55	56	57	58	59	x
10	13·794	13·454	13·111	12·763	12·412	12·058	11·702	11·343	10·983	10·623	10
1	13·778	13·439	13·096	12 749	12·399	12·046	11·691	11·333	10·974	10·615	1
2	13·759	13·422	13·080	12·734	12·385	12 034	11·679	11·323	10 965	10 605	2
3	13·740	13 403	13·063	12·719	12·371	12·020	11·667	11·311	10·954	10·595	3
4	13·718	13·383	13·014	12·701	12·355	12·005	11·653	11·298	10·942	10·585	4
15	13·695	13·361	13·024	12·682	12 337	11·988	11·637	11·284	10·929	10·573	15
6	13·669	13·338	13·002	12·661	12 317	11·970	11 621	11·268	10·914	10·559	6
7	13·612	13·313	12·978	12·640	12·297	11·951	11·603	11·252	10·899	10·545	7
8	13·614	13·285	12·953	12·616	12·275	11·931	11·584	11·234	10 883	10·530	8
9	13·582	13·256	12 925	12·590	12·251	11·908	11·563	11·215	10·865	10·513	9
20	13·549	13·225	12 896	12·562	12·225	11·884	11·540	11·194	10·845	10 495	20
1	13·513	13·191	12·864	12·533	12·198	11·859	11·516	11 171	10·825	10·476	1
2	13·476	13·156	12·832	12·502	12·169	11·832	11·491	11·148	10·803	10·456	2
3	13·436	13·119	12·796	12·469	12·138	11·803	11·464	11·123	10·779	10·434	3
4	13·394	13·079	12·759	12·434	12·105	11·772	11·436	11·097	10·755	10·411	4
25	13·350	13·037	12·720	12·398	12·071	11·740	11·406	11·069	10·729	10·387	25
6	13·303	12 993	12·679	12·359	12·035	11·706	11·374	11·039	10·701	10·362	6
7	13 253	12 947	12·635	12·318	11·997	11·671	11·341	11·008	10 673	10·335	7
8	13·202	12·899	12·590	12·276	11·957	11·634	11·307	10·976	10 613	10·307	8
9	13·148	12·848	12·542	12·231	11·915	11·594	11·270	10·912	10 611	10·278	9
30	13·090	12·794	12·492	12·184	11·871	11·553	11·232	10 906	10·578	10·247	30
1	13·030	12·737	12·439	12·134	11·825	11·510	11·191	10·869	10·543	10·215	1
2	12·967	12·678	12 383	12 082	11·776	11·464	11·149	10·829	10·506	10·181	2
3	12·900	12·615	12·324	12·027	11·724	11·416	11·104	10·788	10·468	10 145	3
4	12·830	12·549	12·262	11·969	11·670	11·366	11·057	10·744	10·427	10 107	4
35	12·755	12·478	12·196	11·907	11·612	11·312	11·007	10·697	10·384	10·067	35
6	12 676	12·405	12·127	11·842	11·552	11·255	10·954	10·648	10·338	10·025	6
7	12·593	12·326	12·053	11·773	11·487	11·195	10·898	10·596	10·290	9·980	7
8	12·501	12·243	11·975	11·700	11·418	11·131	10·838	10·540	10·238	9·932	8
9	12·411	12·155	11·892	11·622	11·346	11·063	10·775	10·482	10·184	9·881	9
40	12·311	12·061	11·804	11·539	11·268	10 990	10·707	10 418	10·125	9·827	40
1	12·205	11·961	11·710	11·451	11·185	10·913	10·635	10·351	10·062	9 769	1
2	12·093	11·855	11·610	11·357	11·097	10·831	10·558	10·279	9·995	9·707	2
3	11·975	11·743	11·504	11·257	11·001	10 743	10·476	10·203	9·924	9·641	3
4	11·848	11·624	11·391	11·151	10·904	10·649	10·388	10·121	9·848	9·570	4
45	11·715	11·497	11·272	11·039	10·797	10·549	10·294	10 033	9 766	9·494	45
6	11·575	11·364	11·146	10·919	10·685	10·443	10·195	9·940	9·679	9·413	6
7	11·426	11·223	11·012	10·792	10·565	10·330	10·089	9·841	9 586	9 326	7
8	11·270	11·074	10·870	10·658	10·438	10·211	9·976	9·735	9·487	9 233	8
9	11·105	10·917	10·720	10·516	10·304	10·084	9·857	9 622	9·381	9·135	9
50	10·933	10·752	10·564	10 367	10·162	9·950	9 730	9·503	9·270	9·030	50
1	50	10·579	10·398	10 209	10·013	9·808	9·596	9·377	9·151	8·918	1
2		51	10·225	10·041	9·856	9·659	9 455	9·244	9·025	8·801	2
3				9 871	9·690	9·502	9·306	9·103	8·892	8·675	3
4					9·518	9·337	9·150	8·955	8·752	8·544	4
55						9·165	8·986	8·799	8·605	8 404	55
6	61						8·815	8·636	8·451	8·258	6
7		60						8·467	8·289	8·105	7
8									8·121	7·945	8
9										7·778	9
61	7·106										61
60	7·268	7·440									60
	61	60	52	53	54	55	56	57	58	59	

WHOLE-LIFE PARTICIPATING ASSURANCES.—MALE LIVES.

O^M   *Values of Annuities on Two Joint Lives.*   **2¾ per-cent.**

x	60	61	62	63	64	65	66	67	68	69	x
10	10·262	9·901	9·542	9·183	8·827	8·472	8·122	7·775	7·432	7·094	10
1	10·254	9·895	9·535	9·178	8·821	8·468	8·118	7·771	7·428	7·091	1
2	10·246	9·887	9·528	9·171	8·816	8·463	8·113	7·767	7·425	7·087	2
3	10 237	9·879	9·521	9·164	8·809	8·457	8·108	7·762	7·421	7·084	3
4	10·227	9·869	9·512	9·157	8·803	8·451	8·102	7 757	7·416	7·079	4
15	10·216	9 859	9·503	9·148	8·795	8·444	8·096	7·751	7·411	7·075	15
6	10·204	9·848	9·493	9·138	8·786	8·436	8 089	7·744	7·405	7·069	6
7	10·191	9·836	9·482	9·129	8·777	8·427	8·081	7·738	7·398	7·064	7
8	10·177	9·823	9·470	9·118	8·767	8·418	8·072	7·730	7·391	7·057	8
9	10·161	9·809	9·457	9·106	8·756	8·408	8·063	7·721	7·384	7·051	9
20	10·144	9·793	9·442	9·092	8·744	8 397	8·053	7·712	7·375	7·043	20
1	10·127	9·777	9·427	9·079	8·731	8·385	8·042	7·702	7·366	7·035	1
2	10·108	9·760	9 411	9 064	8·717	8·373	8·031	7·692	7·357	7·026	2
3	10·088	9·741	9·394	9 048	8·703	8·359	8·019	7·681	7·347	7·017	3
4	10·067	9 721	9·376	9·031	8·687	8·345	8·006	7 669	7·336	7·007	4
25	10·045	9·701	9·357	9·013	8·671	8·330	7·992	7·656	7·324	6·996	25
6	10·021	9·679	9·337	8·995	8·654	8·315	7·977	7·643	7·312	6·985	6
7	9·996	9 656	9·315	8·975	8·636	8·298	7·962	7·629	7·299	6·973	7
8	9 970	9·632	9·294	8·955	8 617	8·281	7·947	7·615	7·286	6·962	8
9	9·943	9 607	9·270	8·933	8·598	8·263	7·930	7·599	7·272	6·949	9
30	9·914	9·581	9·246	8·911	8·577	8·244	7·912	7·584	7·258	6·936	30
1	9·885	9·553	9·220	8·887	8·555	8·224	7·894	7·567	7·243	6·921	1
2	9·853	9 524	9 193	8·863	8·532	8·203	7·875	7·549	7·227	6·907	2
3	9·820	9·493	9·165	8·837	8·509	8·181	7·855	7·531	7·210	6·892	3
4	9·785	9·461	9 135	8·809	8·483	8·158	7·834	7·512	7·192	6·876	4
35	9·748	9·427	9·104	8·780	8·457	8·133	7·811	7·491	7·173	6·859	35
6	9·709	9·391	9·071	8·750	8·429	8·108	7·788	7·470	7·154	6·841	6
7	9·667	9·352	9·035	8·717	8·399	8·080	7·763	7·447	7·133	6·822	7
8	9·623	9·312	8·998	8·683	8·367	8·051	7·736	7·423	7·111	6·802	8
9	9·576	9·268	8·958	8 646	8·334	8·021	7·709	7·397	7·088	6·781	9
40	9·526	9 222	8·915	8·607	8·298	7·988	7·678	7·370	7·063	6·758	40
1	9·472	9·172	8·869	8·565	8·259	7·952	7·646	7·340	7·036	6·734	1
2	9·415	9·119	8·820	8·520	8·218	7·914	7·611	7·309	7·007	6·708	2
3	9·353	9·062	8·768	8·471	8·173	7·874	7·574	7·275	6·976	6·680	3
4	9·287	9·001	8·712	8·419	8·125	7·830	7·534	7·238	6·943	6·649	4
45	9·217	8·936	8 651	8·361	8·074	7·783	7·491	7·198	6·907	6·617	45
6	9·142	8·866	8·586	8·304	8·019	7·732	7·444	7·156	6·868	6·581	6
7	9·061	8·791	8·517	8·240	7·960	7·678	7·395	7·110	6·827	6·543	7
8	8·974	8·711	8·443	8·171	7·896	7·619	7·341	7·061	6·782	6·502	8
9	8·882	8·625	8·363	8·097	7·828	7·556	7·283	7·009	6·733	6·458	9
50	8·785	8·534	8·278	8·019	7·756	7·490	7·222	6·952	6·682	6·411	50
1	8·680	8·436	8·188	7·935	7·678	7·418	7·155	6·891	6·626	6·360	1
2	8·570	8 333	8·091	7·845	7·595	7·341	7·084	6·826	6·566	6·306	2
3	8·452	8·223	7·989	7·749	7·506	7·259	7·009	6·756	6·502	6·247	3
4	8·328	8·107	7·880	7·648	7·412	7·171	6·928	6·681	6·433	6·184	4
55	8·197	7·984	7·765	7 540	7·311	7·078	6·841	6·602	6·360	6·116	55
6	8·060	7·854	7·643	7·427	7·205	6·979	6·750	6·517	6·282	6·044	6
7	7·915	7·718	7·515	7·307	7·093	6·874	6·652	6·427	6·198	5·968	7
8	7·763	7·575	7·380	7·180	6·974	6·764	6·550	6·331	6·110	5·886	8
9	7·604	7·425	7·239	7·047	6·850	6·648	6·441	6·230	6·016	5·799	9
	60	61	62	63	64	65	66	67	68	69	

WHOLE-LIFE PARTICIPATING ASSURANCES.—MALE LIVES.

0ᴹ   *Values of Annuities on Two Joint Lives.*   **2¾ per-cent**

x	70	71	72	73	74	75	76	77	78	79	x
10	6·761	6·434	6·114	5·800	5·494	5·195	4·904	4·622	4·348	4·083	10
1	6·758	6·432	6·112	5·798	5·492	5·194	4·903	4·621	4·347	4·082	1
2	6·755	6·429	6·109	5·796	5·490	5·192	4·901	4·619	4·346	4·081	2
3	6·752	6·426	6·107	5·794	5·488	5·190	4·900	4·618	4·345	4·080	3
4	6·748	6·423	6·104	5·791	5·486	5·188	4·898	4·616	4·343	4·078	4
15	6·744	6·419	6·100	5·788	5·483	5·186	4·896	4·614	4·341	4·077	15
6	6·739	6·415	6·096	5·785	5·480	5·183	4·893	4·612	4·339	4·075	6
7	6·734	6·410	6·092	5·781	5·477	5·180	4·891	4·610	4·337	4·074	7
8	6·728	6·405	6·088	5·777	5·473	5·177	4·888	4·607	4·335	4·072	8
9	6·722	6·399	6·083	5·772	5·469	5·173	4·885	4·604	4·333	4·069	9
20	6·715	6·393	6·077	5·767	5·464	5·169	4·881	4·601	4·330	4·067	20
1	6·708	6·386	6·071	5·762	5·460	5·165	4·877	4·598	4·326	4·061	1
2	6·700	6·379	6·065	5·756	5·451	5·160	4·873	4·594	4·323	4·061	2
3	6·691	6·371	6·058	5·750	5·449	5·155	4·868	4·590	4·320	4·058	3
4	6·682	6·363	6·050	5·743	5·443	5·149	4·863	4·585	4·316	4·054	4
25	6 673	6·355	6·043	5·736	5·436	5 144	4·858	4·581	4·312	4·051	25
6	6·663	6·346	6·034	5·728	5·430	5·137	4·853	4·576	4 307	4·047	6
7	6·652	6·336	6·025	5·720	5·422	5·131	4·847	4·571	4·302	4·042	7
8	6·641	6·326	6·016	5·712	5·415	5·124	4·841	4·565	4·298	4·038	8
9	6·630	6·315	6·007	5·704	5·407	5·117	4·835	4·560	4·293	4·034	9
30	6 618	6·304	5·997	5·695	5·399	5·110	4 828	4·554	4·287	4·029	30
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	4·541	4 019	4 019	2
3	6·578	6·268	5·964	5·665	5·372	5·086	4·807	4·534	4·270	4·014	3
4	6·563	6·255	5·952	5·654	5·363	5·077	4·799	4·527	4·264	4·008	4
35	6·548	6·241	5·939	5·643	5·352	5 068	4·790	4·520	4·257	4·002	35
6	6·532	6·226	5·926	5·631	5·342	5·058	4·782	4·512	4·250	3·996	6
7	6·515	6·211	5·912	5·618	5·330	5·048	4·773	4·504	4·243	3·989	7
8	6·497	6·195	5·898	5·605	5·318	5·037	4·763	4·495	4·235	3·982	8
9	6·477	6·177	5·882	5·591	5·306	5·026	4·753	4·486	4·227	3·975	9
40	6·457	6·159	5·865	5·576	5·292	5·014	4·742	4·477	4·218	3·968	40
1	6·435	6·139	5·847	5·559	5·277	5·001	4·730	4·466	4·209	3·959	1
2	6·411	6·117	5·828	5·542	5·262	4·987	4·717	4·455	4·199	3·950	2
3	6·385	6·094	5·807	5·523	5·245	4·971	4·704	4·443	4·188	3·941	3
4	6·358	6·069	5·784	5·503	5·226	4·955	4·689	4·430	4·177	3·931	4
45	6·328	6·042	5·760	5·481	5·207	4·938	4·674	4·416	4·161	3·919	45
6	6·296	6·013	5·734	5·458	5·186	4·919	4·657	4·400	4·150	3 907	6
7	6·262	5·982	5·706	5·432	5·163	4·898	4·638	4·384	4·136	3·891	7
8	6·225	5·919	5·675	5·405	5·138	4·876	4·618	4·366	4·120	3·880	8
9	6·184	5·912	5·642	5·375	5·111	4·852	4·597	4·347	4·103	3·865	9
50	6·141	5·873	5·607	5·343	5·082	4·826	4·573	4·326	4·084	3·848	50
1	6·095	5·831	5·568	5·308	5 051	4·797	4·548	4·303	4·064	3·830	1
2	6·045	5·785	5·527	5·271	5·017	4·767	4·521	4·279	4·042	3·811	2
3	5·991	5·736	5·483	5·230	4·981	4·734	4·491	4·252	4·018	3·790	3
4	5·934	5 684	5·435	5·187	4·942	4·699	4·459	4·224	3·993	3·767	4
55	5·872	5·627	5·383	5·140	4·899	4·661	4·425	4·193	3·965	3·742	55
6	5·806	5·567	5·328	5·090	4·851	4·620	4·388	4·160	3·935	3·715	6
7	5·735	5·502	5·270	5·037	4·805	4·576	4·348	4·124	3·903	3·687	7
8	5·660	5·434	5·206	4·979	4·753	4·528	4·305	4·085	3·868	3·655	8
9	5·581	5·360	5·139	4·918	4·697	4·477	4·259	4·044	3·831	3·622	9
	70	71	72	73	74	75	76	77	78	79	

Whole-Life Participating Assurances.—Male Lives.

O^M   *Values of Annuities on Two Joint Lives.*   **2¾ per-cent.**

x	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	3·579	3·343	3·115	2·897	2·688	2·490	2·300	2·121	1·951	1
2	3·825	3·579	3·342	3·114	2·896	2·688	2·489	2·300	2·121	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	3·822	3·576	3·339	3·112	2·894	2·686	2·483	2·299	2·120	1·950	15
6	3·820	3·574	3·338	3·111	2·893	2·685	2·487	2·298	2·119	1·949	6
7	3·819	3·573	3·337	3·110	2·893	2·685	2·487	2·298	2·119	1·949	7
8	3·817	3·572	3·335	3·109	2·891	2·684	2·486	2·297	2·118	1·948	8
9	3·815	3·570	3·334	3·108	2·890	2·683	2·485	2·296	2·117	1·948	9
20	3·813	3·568	3·332	3·106	2·889	2·681	2·484	2·295	2·117	1·947	20
1	3·810	3·566	3·330	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	2·482	2·293	2·115	1·946	2
3	3·805	3·561	3·326	3·101	2·884	2·677	2·480	2·292	2·114	1·945	3
4	3·802	3·558	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	2·880	2·674	2·477	2·290	2·112	1·943	25
6	3·795	3·552	3·318	3·094	2·878	2·672	2·476	2·288	2·110	1·942	6
7	3·791	3·549	3·315	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	2·666	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	3·302	3·080	2·866	2·661	2·466	2·280	2·103	1·935	1
2	3·770	3·530	3·299	3·076	2·863	2·659	2·464	2·278	2·101	1·934	2
3	3·765	3·526	3·295	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	2·653	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	1·929	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	3·054	2·843	2·641	2·449	2·264	2·090	1·924	8
9	3·732	3·496	3·268	3·050	2·839	2·638	2·446	2·262	2·087	1·922	9
40	3·725	3·490	3·263	3·045	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	2·622	2·431	2·249	2·077	1·912	3
4	3·692	3·460	3·237	3·022	2·815	2·617	2·427	2·246	2·073	1·910	4
45	3·682	3·452	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	2·418	2·237	2·066	1·903	6
7	3·660	3·432	3·212	3·000	2·796	2·600	2·412	2·233	2·062	1·900	7
8	3·647	3·421	3·202	2·992	2·788	2·593	2·406	2·228	2·058	1·896	8
9	3·633	3·409	3·192	2·982	2·780	2·586	2·400	2·222	2·053	1·892	9
50	3·619	3·396	3·180	2·972	2·771	2·578	2·393	2·216	2·048	1·887	50
1	3·603	3·382	3·168	2·961	2·761	2·569	2·386	2·209	2·042	1·882	1
2	3·586	3·366	3·154	2·949	2·751	2·560	2·378	2·202	2·036	1·877	2
3	3·567	3·350	3·139	2·936	2·739	2·550	2·369	2·195	2·029	1·871	3
4	3·546	3·332	3·123	2·922	2·727	2·539	2·359	2·186	2·022	1·865	4
55	3·524	3·312	3·106	2·906	2·713	2·527	2·349	2·177	2·014	1·857	55
6	3·501	3·291	3·087	2·890	2·699	2·514	2·337	2·167	2·005	1·850	6
7	3·475	3·268	3·067	2·872	2·683	2·500	2·325	2·156	1·996	1·842	7
8	3·447	3·243	3·045	2·852	2·666	2·485	2·312	2·145	1·985	1·833	8
9	3·417	3·216	3·021	2·831	2·647	2·469	2·297	2·132	1·974	1·823	9
	80	81	82	83	84	85	86	87	88	89	

WHOLE-LIFE PARTICIPATING ASSURANCES.—MALE LIVES.

O^M   *Values of Annuities on Two Joint Lives.*   2¾ **per-cent.**

x	90	91	92	93	94	95	96	97	98	99	100	101	x
10	1·790	1·639	1·494	1·362	1·234	1·120	1 007	·916	·825	·702	·550	·323	10
1	1·789	1·639	1·494	1·362	I 234	1·120	1·007	·916	·825	·702	·550	·323	1
2	1·789	1·638	1·494	1·362	1·233	1·120	1·007	·916	·825	·702	·550	·323	2
3	1·789	1·638	1·494	1·362	1·233	1·120	1·007	·916	·825	·702	·550	·323	3
4	1·789	1·638	1·493	1·362	1·233	1·120	1·007	·915	·825	·701	·550	·323	4
15	1·788	1·638	1·493	1·362	1·233	1·119	1·007	·915	·825	·701	·550	·323	15
6	1·788	1·637	1·493	1·361	1·233	1·119	1·007	·915	·825	·701	·550	·323	6
7	1·788	1 637	1·493	1·361	1·233	1·119	1·006	·915	·825	·701	·550	·323	7
8	1·787	1·637	1·492	1·361	1·232	1·119	1·006	·915	·825	·701	·550	·323	8
9	1·787	1·636	1·492	1·360	1·232	1·119	1·006	·915	·824	·701	·550	·323	9
20	1·786	1·636	1·492	1·360	1·232	1·118	1·006	·915	·824	·701	·550	·323	20
1	1·785	1·635	1·491	1·360	1·231	1·118	1·006	·914	·824	·701	·550	·323	1
2	1·785	1·635	1·491	1·359	1·231	1·118	1·005	·914	·824	·701	·549	·323	2
3	1·784	1·634	1·490	1·359	1·231	1·117	1·005	·914	·824	·700	·549	·323	3
4	1·783	1·633	1·489	1·358	1·230	1·117	1·005	·914	·823	·700	·549	·323	4
25	1·782	1·632	1·489	1·358	1·230	1·117	1·004	·913	·823	·700	·549	·323	25
6	1·781	1·632	1·488	1·357	1·229	1·116	1·004	·913	·823	·700	·549	·323	6
7	1·780	1·631	1·487	1·356	1·229	1·116	1·003	·913	·823	·700	·549	323	7
8	1·779	1·630	1·486	1·356	1·228	1·115	1 003	·912	·822	·699	·549	·323	8
9	1·778	1·629	1·486	1·355	1·227	1·115	1·003	·912	·822	·699	·548	·323	9
30	1·777	1·628	1·485	1 354	1·227	1·114	1·002	·911	·822	·699	·548	·322	30
1	1·776	1·627	1·484	1·353	1·226	1·113	1·002	·911	·821	·699	·548	·322	1
2	1·775	1·626	1·483	1·353	1·225	1·113	1·001	·911	·821	·698	·548	·322	2
3	1·773	1·625	1·482	1·352	1·225	1·112	1·001	·910	·821	·698	·548	·322	3
4	1·772	1·623	1·481	1·351	1·224	1·112	1·000	·910	·820	·698	·548	·322	4
35	1·770	1·622	1·480	1·350	1·223	1·111	·999	·909	·820	·697	·547	·322	35
6	1·769	1·621	1·479	1·349	1·222	1 110	·999	·909	·819	·697	·547	·322	6
7	1·767	1·619	1·477	1·348	1·221	1·109	·998	·908	·819	·697	·547	·322	7
8	1·766	1·618	1·476	1·317	1·220	1·109	·998	·907	·818	·696	·547	·322	8
9	1·764	1·617	1·475	1·346	1·220	1·108	·997	·907	·818	·696	·546	·322	9
40	1·762	1·615	1·474	1·345	1·219	1·107	·996	·906	·817	·696	·546	·321	40
1	1·760	1·613	1·472	1·343	1·217	1·106	·995	·906	·817	·695	·546	·321	1
2	1·758	1·611	1·471	1 342	1·216	1·105	·994	·905	816	·695	·545	·321	2
3	1·756	1·609	1·469	1·340	1·215	1·104	·994	·904	·816	·694	·545	·321	3
4	1·753	1·607	1·467	1·339	1·214	1·103	·993	·903	·815	·694	·545	·321	4
45	1·751	1·605	1·465	1·337	1·212	1·101	·991	·902	·814	·693	·544	·321	45
6	1·748	1 603	1·463	1·335	1·211	1·100	·990	·901	·813	·693	·544	·320	6
7	1·745	1·600	1·461	1·333	1·209	1·099	·989	·900	·812	·692	·544	·320	7
8	1·741	1·597	1·458	1·331	1·207	1·097	·988	·899	·811	·691	·543	·320	8
9	1·738	1·594	1·455	1·329	1·205	1·095	·986	·898	·810	·690	·543	·320	9
50	1·734	1·591	1·453	1 326	1·203	1·093	·985	·896	·809	·690	·542	·320	50
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	2
3	1·720	1·578	1·442	1·317	1·195	1·087	·979	·892	·805	·686	·540	·319	3
4	1·714	1·574	1·438	1·314	1·192	1 084	·977	·890	·804	·685	·539	·318	4
55	1·708	1·568	1·433	1·310	1·189	1·081	·974	·888	·802	·684	·538	·318	55
6	1·702	1·563	1·428	1·306	1·185	1·078	·972	·885	·800	·682	·537	·317	6
7	1·695	1·556	1·423	1·301	1·181	1·075	·969	·883	·798	·681	·536	·317	7
8	1·687	1·550	1·417	1·296	1·177	1·071	·965	·880	·796	·679	·535	·316	8
9	1·678	1·542	1·411	1·290	1·172	1·067	·962	·877	·793	·677	·534	·316	9
	90	91	92	93	94	95	96	97	98	99	100	101	