

Figure: 34 TAC §29.11(c)

**TEACHER RETIREMENT SYTEM
OF TEXAS**

Service Retirement Option Factors
Based on 7.25% Interest

Effective September 1, 2019
TRS Rule 34 TAC 29.11

TEACHER RETIREMENT SYSTEM OF TEXAS

Retired Member Option Factors **(Effective September 1, 2019)**

Table of Contents

- Section I Joint and 100% Beneficiary Option 1 Factors with Pop-up Feature**
- Section II Joint and 50% Beneficiary Option 2 Factors with Pop-up Feature**
- Section III Five-year Certain and Continuous Thereafter Option 3 Factors and
Ten-Year Certain and Continuous Thereafter Option 4 Factors**
- Section IV Joint and 75% Beneficiary Option 5 Factors with Pop-up Feature**

SECTION I

TEACHER RETIREMENT SYSTEM OF TEXAS

OPTION 1 FACTORS JOINT AND 100% BENEFICIARY WITH POP-UP FEATURE

Percentage is applied to the amount of single life service retirement benefit in order to obtain the optional benefit. Each percentage is based on age as of last birthday of member and beneficiary. Benefit reverts to single life amount if beneficiary predeceases member.

Age of beneficiary	Age of Member at Date of Retirement														
	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1	99.2182	99.1587	99.0959	99.0290	98.9581	98.8830	98.8022	98.7160	98.6239	98.5249	98.4182	98.3023	98.1764	98.0407	97.8941
2	99.2296	99.1706	99.1082	99.0417	98.9712	98.8965	98.8161	98.7303	98.6384	98.5398	98.4335	98.3178	98.1923	98.0568	97.9105
3	99.2415	99.1829	99.1210	99.0550	98.9849	98.9106	98.8306	98.7452	98.6538	98.5556	98.4496	98.3343	98.2090	98.0739	97.9279
4	99.2537	99.1957	99.1343	99.0687	98.9992	98.9254	98.8459	98.7609	98.6699	98.5721	98.4665	98.3516	98.2267	98.0920	97.9463
5	99.2663	99.2089	99.1481	99.0831	99.0140	98.9408	98.8618	98.7773	98.6868	98.5895	98.4843	98.3699	98.2454	98.1111	97.9658
6	99.2793	99.2224	99.1623	99.0979	99.0295	98.9568	98.8784	98.7945	98.7045	98.6077	98.5031	98.3891	98.2651	98.1312	97.9864
7	99.2925	99.2364	99.1769	99.1132	99.0454	98.9734	98.8956	98.8124	98.7230	98.6267	98.5227	98.4092	98.2858	98.1524	98.0080
8	99.3060	99.2507	99.1920	99.1290	99.0619	98.9906	98.9136	98.8309	98.7422	98.6466	98.5432	98.4303	98.3075	98.1746	98.0308
9	99.3198	99.2652	99.2073	99.1451	99.0789	99.0084	98.9321	98.8502	98.7622	98.6674	98.5646	98.4524	98.3302	98.1980	98.0548
10	99.3337	99.2800	99.2230	99.1617	99.0963	99.0266	98.9512	98.8702	98.7830	98.6889	98.5869	98.4755	98.3540	98.2224	98.0799
11	99.3477	99.2950	99.2389	99.1786	99.1141	99.0454	98.9709	98.8908	98.8045	98.7113	98.6101	98.4995	98.3788	98.2480	98.1062
12	99.3618	99.3101	99.2551	99.1957	99.1323	99.0646	98.9911	98.9119	98.8266	98.7344	98.6342	98.5245	98.4046	98.2747	98.1338
13	99.3760	99.3253	99.2713	99.2131	99.1508	99.0841	99.0117	98.9337	98.8494	98.7582	98.6590	98.5503	98.4315	98.3026	98.1625
14	99.3901	99.3405	99.2877	99.2306	99.1695	99.1040	99.0328	98.9559	98.8728	98.7828	98.6847	98.5771	98.4594	98.3315	98.1925
15	99.4042	99.3557	99.3041	99.2483	99.1884	99.1242	99.0542	98.9786	98.8968	98.8080	98.7112	98.6048	98.4882	98.3615	98.2236
16	99.4181	99.3709	99.3205	99.2659	99.2073	99.1445	99.0759	99.0017	98.9212	98.8338	98.7383	98.6332	98.5180	98.3925	98.2559
17	99.4319	99.3859	99.3368	99.2836	99.2264	99.1650	99.0978	99.0250	98.9460	98.8601	98.7660	98.6625	98.5486	98.4246	98.2893
18	99.4454	99.4007	99.3529	99.3011	99.2454	99.1854	99.1198	99.0486	98.9712	98.8868	98.7944	98.6923	98.5801	98.4575	98.3238
19	99.4588	99.4153	99.3689	99.3185	99.2643	99.2059	99.1419	99.0723	98.9966	98.9139	98.8231	98.7228	98.6122	98.4914	98.3593
20	99.4719	99.4297	99.3847	99.3357	99.2830	99.2263	99.1639	99.0961	99.0221	98.9412	98.8523	98.7538	98.6451	98.5260	98.3957
21	99.4847	99.4438	99.4002	99.3527	99.3016	99.2465	99.1859	99.1198	99.0477	98.9687	98.8818	98.7852	98.6784	98.5614	98.4330
22	99.4973	99.4577	99.4154	99.3694	99.3199	99.2665	99.2076	99.1435	99.0733	98.9963	98.9114	98.8169	98.7123	98.5973	98.4711
23	99.5095	99.4712	99.4303	99.3858	99.3379	99.2862	99.2291	99.1669	99.0988	99.0239	98.9411	98.8488	98.7464	98.6337	98.5098
24	99.5214	99.4844	99.4449	99.4019	99.3555	99.3056	99.2504	99.1901	99.1240	99.0513	98.9708	98.8808	98.7808	98.6705	98.5490
25	99.5331	99.4972	99.4591	99.4176	99.3728	99.3246	99.2713	99.2130	99.1490	99.0785	99.0003	98.9128	98.8152	98.7075	98.5886
26	99.5444	99.5098	99.4729	99.4329	99.3898	99.3432	99.2918	99.2355	99.1737	99.1054	99.0296	98.9446	98.8496	98.7446	98.6284
27	99.5554	99.5220	99.4864	99.4478	99.4063	99.3615	99.3119	99.2576	99.1979	99.1320	99.0586	98.9762	98.8839	98.7817	98.6683
28	99.5661	99.5338	99.4996	99.4624	99.4224	99.3792	99.3315	99.2792	99.2217	99.1581	99.0872	99.0074	98.9179	98.8186	98.7083
29	99.5764	99.5453	99.5123	99.4765	99.4380	99.3966	99.3506	99.3004	99.2450	99.1837	99.1153	99.0382	98.9515	98.8552	98.7480
30	99.5865	99.5565	99.5247	99.4902	99.4532	99.4134	99.3693	99.3210	99.2678	99.2088	99.1429	99.0685	98.9847	98.8914	98.7874
31	99.5963	99.5674	99.5368	99.5036	99.4680	99.4298	99.3875	99.3411	99.2900	99.2333	99.1700	99.0982	99.0173	98.9271	98.8264
32	99.6058	99.5779	99.5484	99.5165	99.4824	99.4458	99.4051	99.3606	99.3116	99.2573	99.1964	99.1273	99.0493	98.9622	98.8648
33	99.6151	99.5881	99.5598	99.5291	99.4964	99.4612	99.4223	99.3797	99.3327	99.2806	99.2222	99.1558	99.0807	98.9967	98.9026
34	99.6240	99.5981	99.5708	99.5413	99.5099	99.4763	99.4389	99.3981	99.3532	99.3033	99.2473	99.1835	99.1113	99.0304	98.9397
35	99.6327	99.6077	99.5815	99.5532	99.5230	99.4908	99.4551	99.4161	99.3731	99.3253	99.2717	99.2105	99.1412	99.0634	98.9761

TEACHER RETIREMENT SYSTEM OF TEXAS

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Age of beneficiary	Age of Member at Date of Retirement														
	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
36	99.6412	99.6171	99.5918	99.5646	99.5357	99.5049	99.4708	99.4334	99.3923	99.3467	99.2954	99.2368	99.1703	99.0956	99.0116
37	99.6495	99.6262	99.6019	99.5758	99.5481	99.5186	99.4859	99.4503	99.4111	99.3674	99.3184	99.2624	99.1985	99.1269	99.0462
38	99.6575	99.6350	99.6117	99.5866	99.5601	99.5319	99.5007	99.4666	99.4292	99.3876	99.3408	99.2872	99.2260	99.1573	99.0799
39	99.6653	99.6437	99.6212	99.5971	99.5717	99.5448	99.5149	99.4825	99.4468	99.4071	99.3624	99.3112	99.2527	99.1869	99.1126
40	99.6729	99.6521	99.6304	99.6073	99.5830	99.5573	99.5288	99.4978	99.4638	99.4260	99.3834	99.3345	99.2785	99.2156	99.1444
41	99.6804	99.6602	99.6394	99.6173	99.5939	99.5694	99.5422	99.5127	99.4803	99.4443	99.4037	99.3570	99.3036	99.2434	99.1753
42	99.6876	99.6682	99.6482	99.6269	99.6046	99.5811	99.5552	99.5271	99.4962	99.4620	99.4234	99.3789	99.3278	99.2703	99.2052
43	99.6947	99.6760	99.6568	99.6363	99.6149	99.5926	99.5678	99.5410	99.5117	99.4791	99.4424	99.4000	99.3513	99.2964	99.2342
44	99.7017	99.6836	99.6651	99.6455	99.6250	99.6037	99.5801	99.5546	99.5267	99.4957	99.4608	99.4205	99.3740	99.3216	99.2622
45	99.7085	99.6910	99.6732	99.6544	99.6348	99.6145	99.5920	99.5677	99.5412	99.5118	99.4787	99.4402	99.3960	99.3460	99.2893
46	99.7152	99.6983	99.6812	99.6631	99.6444	99.6250	99.6035	99.5805	99.5553	99.5274	99.4959	99.4594	99.4173	99.3696	99.3155
47	99.7217	99.7054	99.6890	99.6716	99.6537	99.6352	99.6148	99.5929	99.5690	99.5425	99.5127	99.4779	99.4378	99.3924	99.3409
48	99.7282	99.7124	99.6966	99.6799	99.6628	99.6451	99.6257	99.6049	99.5823	99.5572	99.5289	99.4959	99.4577	99.4145	99.3654
49	99.7345	99.7193	99.7040	99.6880	99.6717	99.6549	99.6364	99.6166	99.5952	99.5714	99.5446	99.5133	99.4770	99.4359	99.3891
50	99.7407	99.7260	99.7113	99.6960	99.6803	99.6643	99.6468	99.6280	99.6077	99.5852	99.5598	99.5301	99.4956	99.4565	99.4120
51	99.7468	99.7326	99.7185	99.7038	99.6888	99.6736	99.6569	99.6391	99.6199	99.5986	99.5746	99.5464	99.5137	99.4765	99.4341
52	99.7528	99.7391	99.7255	99.7114	99.6971	99.6826	99.6668	99.6499	99.6317	99.6117	99.5890	99.5623	99.5311	99.4958	99.4556
53	99.7587	99.7455	99.7324	99.7189	99.7052	99.6915	99.6764	99.6605	99.6433	99.6243	99.6029	99.5776	99.5481	99.5146	99.4763
54	99.7646	99.7518	99.7392	99.7262	99.7132	99.7001	99.6858	99.6707	99.6545	99.6367	99.6164	99.5925	99.5645	99.5327	99.4963
55	99.7703	99.7580	99.7459	99.7334	99.7210	99.7086	99.6950	99.6808	99.6655	99.6487	99.6296	99.6070	99.5805	99.5503	99.5158
56	99.7760	99.7641	99.7525	99.7405	99.7286	99.7169	99.7040	99.6906	99.6762	99.6604	99.6425	99.6211	99.5960	99.5674	99.5346
57	99.7817	99.7702	99.7589	99.7475	99.7362	99.7250	99.7128	99.7002	99.6866	99.6718	99.6549	99.6348	99.6110	99.5839	99.5529
58	99.7873	99.7761	99.7653	99.7543	99.7435	99.7330	99.7215	99.7095	99.6968	99.6829	99.6671	99.6481	99.6257	99.6000	99.5706
59	99.7928	99.7820	99.7716	99.7611	99.7508	99.7408	99.7299	99.7187	99.7068	99.6937	99.6789	99.6611	99.6399	99.6156	99.5878
60	99.7983	99.7879	99.7778	99.7677	99.7579	99.7484	99.7382	99.7276	99.7165	99.7043	99.6905	99.6737	99.6537	99.6308	99.6045
61	99.8037	99.7936	99.7839	99.7742	99.7649	99.7559	99.7463	99.7364	99.7260	99.7146	99.7017	99.6860	99.6671	99.6455	99.6207
62	99.8091	99.7993	99.7900	99.7807	99.7718	99.7633	99.7542	99.7449	99.7352	99.7247	99.7127	99.6979	99.6802	99.6598	99.6363
63	99.8145	99.8050	99.7960	99.7870	99.7785	99.7705	99.7619	99.7533	99.7443	99.7345	99.7233	99.7095	99.6929	99.6737	99.6516
64	99.8198	99.8106	99.8019	99.7933	99.7852	99.7776	99.7695	99.7614	99.7531	99.7440	99.7336	99.7208	99.7052	99.6872	99.6663
65	99.8252	99.8162	99.8078	99.7995	99.7918	99.7846	99.7770	99.7694	99.7617	99.7533	99.7437	99.7317	99.7171	99.7002	99.6806
66	99.8305	99.8218	99.8136	99.8057	99.7983	99.7915	99.7843	99.7772	99.7700	99.7623	99.7535	99.7424	99.7287	99.7129	99.6945
67	99.8358	99.8273	99.8194	99.8117	99.8047	99.7982	99.7915	99.7849	99.7782	99.7711	99.7630	99.7527	99.7400	99.7252	99.7079
68	99.8411	99.8328	99.8251	99.8178	99.8110	99.8049	99.7985	99.7924	99.7863	99.7797	99.7723	99.7627	99.7509	99.7370	99.7209
69	99.8463	99.8383	99.8309	99.8237	99.8172	99.8115	99.8055	99.7998	99.7941	99.7881	99.7813	99.7725	99.7614	99.7486	99.7334
70	99.8516	99.8438	99.8366	99.8297	99.8234	99.8180	99.8123	99.8070	99.8018	99.7963	99.7901	99.7820	99.7717	99.7597	99.7456

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Age of beneficiary	Age of Member at Date of Retirement														
	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
71	99.8569	99.8493	99.8422	99.8356	99.8296	99.8244	99.8190	99.8141	99.8093	99.8043	99.7987	99.7912	99.7816	99.7705	99.7573
72	99.8622	99.8547	99.8479	99.8414	99.8357	99.8307	99.8257	99.8210	99.8166	99.8121	99.8070	99.8001	99.7913	99.7809	99.7687
73	99.8674	99.8602	99.8535	99.8473	99.8417	99.8370	99.8322	99.8279	99.8239	99.8197	99.8151	99.8088	99.8007	99.7910	99.7797
74	99.8727	99.8656	99.8591	99.8531	99.8477	99.8432	99.8387	99.8347	99.8310	99.8272	99.8231	99.8173	99.8098	99.8008	99.7903
75	99.8779	99.8710	99.8647	99.8588	99.8537	99.8494	99.8451	99.8413	99.8379	99.8346	99.8309	99.8256	99.8186	99.8103	99.8005
76	99.8831	99.8764	99.8702	99.8646	99.8596	99.8555	99.8514	99.8479	99.8448	99.8418	99.8384	99.8336	99.8272	99.8195	99.8104
77	99.8883	99.8818	99.8758	99.8703	99.8654	99.8615	99.8577	99.8544	99.8515	99.8488	99.8459	99.8415	99.8355	99.8285	99.8200
78	99.8935	99.8871	99.8813	99.8759	99.8713	99.8675	99.8638	99.8608	99.8582	99.8557	99.8531	99.8491	99.8437	99.8371	99.8293
79	99.8986	99.8924	99.8867	99.8815	99.8770	99.8735	99.8699	99.8671	99.8647	99.8625	99.8602	99.8566	99.8516	99.8455	99.8383
80	99.9037	99.8977	99.8921	99.8871	99.8828	99.8793	99.8760	99.8733	99.8711	99.8692	99.8672	99.8639	99.8593	99.8537	99.8470
81	99.9087	99.9029	99.8975	99.8926	99.8884	99.8851	99.8819	99.8794	99.8774	99.8757	99.8740	99.8710	99.8668	99.8617	99.8555
82	99.9137	99.9081	99.9028	99.8981	99.8940	99.8909	99.8878	99.8854	99.8836	99.8821	99.8807	99.8780	99.8741	99.8694	99.8637
83	99.9186	99.9132	99.9081	99.9035	99.8996	99.8965	99.8936	99.8914	99.8897	99.8884	99.8872	99.8848	99.8812	99.8769	99.8716
84	99.9235	99.9182	99.9133	99.9089	99.9050	99.9021	99.8993	99.8972	99.8957	99.8946	99.8935	99.8914	99.8882	99.8842	99.8793
85	99.9282	99.9231	99.9184	99.9141	99.9104	99.9076	99.9049	99.9029	99.9015	99.9006	99.8998	99.8979	99.8949	99.8912	99.8867
86	99.9329	99.9280	99.9234	99.9193	99.9157	99.9130	99.9104	99.9085	99.9073	99.9065	99.9058	99.9042	99.9015	99.8981	99.8939
87	99.9374	99.9327	99.9283	99.9244	99.9209	99.9183	99.9158	99.9140	99.9129	99.9122	99.9118	99.9103	99.9079	99.9048	99.9009
88	99.9419	99.9374	99.9332	99.9293	99.9260	99.9235	99.9211	99.9194	99.9184	99.9178	99.9175	99.9162	99.9140	99.9112	99.9077
89	99.9461	99.9419	99.9379	99.9342	99.9310	99.9286	99.9263	99.9247	99.9237	99.9233	99.9231	99.9220	99.9200	99.9175	99.9142
90	99.9503	99.9463	99.9424	99.9390	99.9359	99.9336	99.9314	99.9298	99.9289	99.9285	99.9285	99.9276	99.9258	99.9235	99.9205
91	99.9543	99.9505	99.9469	99.9436	99.9406	99.9384	99.9363	99.9348	99.9339	99.9337	99.9337	99.9330	99.9314	99.9293	99.9266
92	99.9581	99.9545	99.9511	99.9480	99.9452	99.9431	99.9411	99.9396	99.9388	99.9386	99.9388	99.9382	99.9368	99.9349	99.9324
93	99.9618	99.9584	99.9552	99.9523	99.9497	99.9477	99.9457	99.9443	99.9435	99.9434	99.9436	99.9431	99.9419	99.9402	99.9379
94	99.9652	99.9621	99.9591	99.9564	99.9539	99.9520	99.9502	99.9488	99.9481	99.9479	99.9482	99.9479	99.9468	99.9453	99.9432
95	99.9684	99.9656	99.9628	99.9602	99.9579	99.9562	99.9544	99.9531	99.9524	99.9523	99.9526	99.9523	99.9514	99.9501	99.9482
96	99.9714	99.9687	99.9662	99.9638	99.9617	99.9600	99.9584	99.9571	99.9564	99.9563	99.9567	99.9565	99.9557	99.9545	99.9528
97	99.9740	99.9716	99.9692	99.9670	99.9650	99.9635	99.9620	99.9608	99.9601	99.9600	99.9604	99.9602	99.9596	99.9585	99.9570
98	99.9762	99.9740	99.9718	99.9698	99.9679	99.9665	99.9651	99.9640	99.9633	99.9632	99.9636	99.9635	99.9629	99.9619	99.9606
99	99.9779	99.9759	99.9738	99.9719	99.9702	99.9689	99.9675	99.9664	99.9658	99.9657	99.9661	99.9660	99.9654	99.9645	99.9633
100	99.9790	99.9770	99.9750	99.9732	99.9715	99.9703	99.9690	99.9680	99.9673	99.9672	99.9676	99.9675	99.9670	99.9662	99.9650

TEACHER RETIREMENT SYSTEM OF TEXAS

OPTION 1 FACTORS JOINT AND 100% BENEFICIARY WITH POP-UP FEATURE

Percentage is applied to the amount of single life service retirement benefit in order to obtain the optional benefit. Each percentage is based on age as of last birthday of member and beneficiary. Benefit reverts to single life amount if beneficiary predeceases member.

Age of beneficiary	Age of Member at Date of Retirement														
	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
1	97.7365	97.5673	97.3857	97.1906	96.9812	96.7566	96.5153	96.2558	95.9774	95.6790	95.3590	95.0165	94.6502	94.2595	93.8429
2	97.7532	97.5842	97.4029	97.2079	96.9987	96.7743	96.5333	96.2739	95.9957	95.6975	95.3775	95.0352	94.6690	94.2784	93.8619
3	97.7709	97.6022	97.4211	97.2264	97.0175	96.7933	96.5524	96.2933	96.0153	95.7172	95.3974	95.0552	94.6892	94.2987	93.8823
4	97.7896	97.6212	97.4404	97.2461	97.0374	96.8134	96.5728	96.3139	96.0361	95.7382	95.4186	95.0766	94.7107	94.3203	93.9041
5	97.8095	97.6414	97.4610	97.2669	97.0585	96.8349	96.5945	96.3359	96.0583	95.7606	95.4413	95.0994	94.7337	94.3435	93.9274
6	97.8304	97.6628	97.4827	97.2890	97.0809	96.8576	96.6176	96.3592	96.0819	95.7845	95.4653	95.1237	94.7582	94.3682	93.9522
7	97.8525	97.6853	97.5057	97.3124	97.1047	96.8817	96.6420	96.3840	96.1070	95.8098	95.4910	95.1496	94.7843	94.3945	93.9787
8	97.8759	97.7091	97.5299	97.3371	97.1299	96.9073	96.6680	96.4103	96.1336	95.8368	95.5182	95.1771	94.8121	94.4225	94.0070
9	97.9004	97.7342	97.5556	97.3632	97.1564	96.9344	96.6954	96.4382	96.1619	95.8654	95.5472	95.2064	94.8417	94.4524	94.0370
10	97.9262	97.7606	97.5825	97.3908	97.1845	96.9629	96.7245	96.4677	96.1919	95.8958	95.5779	95.2375	94.8731	94.4841	94.0690
11	97.9532	97.7883	97.6109	97.4198	97.2142	96.9932	96.7553	96.4990	96.2236	95.9280	95.6106	95.2705	94.9065	94.5178	94.1030
12	97.9816	97.8174	97.6408	97.4503	97.2454	97.0250	96.7877	96.5320	96.2572	95.9621	95.6451	95.3055	94.9419	94.5536	94.1392
13	98.0112	97.8479	97.6721	97.4824	97.2782	97.0586	96.8220	96.5669	96.2926	95.9981	95.6817	95.3426	94.9794	94.5915	94.1775
14	98.0421	97.8798	97.7049	97.5161	97.3127	97.0939	96.8580	96.6037	96.3301	96.0362	95.7204	95.3819	95.0192	94.6318	94.2182
15	98.0743	97.9131	97.7392	97.5514	97.3489	97.1310	96.8960	96.6425	96.3697	96.0765	95.7614	95.4235	95.0614	94.6746	94.2615
16	98.1078	97.9477	97.7750	97.5883	97.3869	97.1699	96.9359	96.6833	96.4113	96.1190	95.8046	95.4674	95.1060	94.7198	94.3073
17	98.1426	97.9838	97.8123	97.6268	97.4266	97.2107	96.9778	96.7262	96.4552	96.1638	95.8503	95.5139	95.1533	94.7678	94.3559
18	98.1785	98.0212	97.8511	97.6669	97.4680	97.2534	97.0217	96.7712	96.5013	96.2110	95.8984	95.5629	95.2032	94.8184	94.4073
19	98.2156	98.0599	97.8913	97.7087	97.5112	97.2980	97.0676	96.8184	96.5498	96.2605	95.9491	95.6147	95.2559	94.8720	94.4618
20	98.2539	98.0998	97.9330	97.7520	97.5561	97.3445	97.1155	96.8678	96.6005	96.3126	96.0024	95.6691	95.3114	94.9286	94.5193
21	98.2931	98.1410	97.9760	97.7968	97.6027	97.3928	97.1655	96.9194	96.6536	96.3672	96.0583	95.7264	95.3699	94.9883	94.5800
22	98.3332	98.1832	98.0202	97.8431	97.6509	97.4429	97.2175	96.9731	96.7091	96.4243	96.1170	95.7865	95.4315	95.0511	94.6441
23	98.3742	98.2264	98.0657	97.8907	97.7008	97.4948	97.2715	97.0291	96.7669	96.4839	96.1784	95.8496	95.4961	95.1173	94.7116
24	98.4159	98.2705	98.1122	97.9397	97.7521	97.5484	97.3273	97.0871	96.8271	96.5461	96.2425	95.9156	95.5639	95.1867	94.7827
25	98.4581	98.3154	98.1597	97.9897	97.8047	97.6036	97.3850	97.1472	96.8895	96.6108	96.3094	95.9845	95.6348	95.2595	94.8572
26	98.5007	98.3608	98.2080	98.0409	97.8586	97.6603	97.4444	97.2092	96.9541	96.6779	96.3790	96.0564	95.7089	95.3357	94.9355
27	98.5436	98.4067	98.2569	98.0928	97.9136	97.7183	97.5053	97.2731	97.0209	96.7474	96.4511	96.1312	95.7861	95.4153	95.0173
28	98.5866	98.4529	98.3063	98.1455	97.9695	97.7775	97.5677	97.3387	97.0896	96.8192	96.5258	96.2088	95.8665	95.4983	95.1028
29	98.6296	98.4992	98.3560	98.1986	98.0262	97.8376	97.6314	97.4058	97.1601	96.8930	96.6030	96.2890	95.9498	95.5846	95.1920
30	98.6723	98.5454	98.4058	98.2521	98.0834	97.8986	97.6961	97.4743	97.2323	96.9689	96.6824	96.3719	96.0361	95.6742	95.2847
31	98.7148	98.5915	98.4556	98.3057	98.1409	97.9601	97.7617	97.5439	97.3059	97.0465	96.7639	96.4573	96.1252	95.7668	95.3808
32	98.7567	98.6371	98.5051	98.3593	98.1986	98.0220	97.8279	97.6144	97.3807	97.1256	96.8473	96.5449	96.2169	95.8625	95.4804
33	98.7981	98.6823	98.5543	98.4126	98.2562	98.0841	97.8945	97.6856	97.4566	97.2061	96.9324	96.6345	96.3110	95.9610	95.5831
34	98.8388	98.7269	98.6029	98.4655	98.3136	98.1461	97.9612	97.7572	97.5331	97.2876	97.0189	96.7259	96.4073	96.0621	95.6889
35	98.8788	98.7707	98.6509	98.5178	98.3705	98.2078	98.0279	97.8290	97.6101	97.3699	97.1065	96.8189	96.5055	96.1656	95.7974

TEACHER RETIREMENT SYSTEM OF TEXAS

OPTION 1 FACTORS JOINT AND 100% BENEFICIARY WITH POP-UP FEATURE

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Age of beneficiary	Age of Member at Date of Retirement														
	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
36	98.9179	98.8137	98.6980	98.5694	98.4268	98.2690	98.0943	97.9007	97.6873	97.4527	97.1950	96.9131	96.6054	96.2711	95.9085
37	98.9561	98.8558	98.7443	98.6201	98.4823	98.3296	98.1602	97.9721	97.7645	97.5357	97.2840	97.0081	96.7066	96.3784	96.0218
38	98.9933	98.8969	98.7896	98.6699	98.5369	98.3893	98.2253	98.0430	97.8412	97.6186	97.3732	97.1038	96.8087	96.4870	96.1370
39	99.0296	98.9369	98.8338	98.7186	98.5905	98.4481	98.2895	98.1130	97.9174	97.7012	97.4623	97.1997	96.9115	96.5968	96.2537
40	99.0648	98.9760	98.8769	98.7662	98.6429	98.5057	98.3527	98.1821	97.9927	97.7830	97.5510	97.2954	97.0145	96.7071	96.3716
41	99.0991	99.0139	98.9189	98.8126	98.6941	98.5620	98.4147	98.2500	98.0670	97.8640	97.6390	97.3907	97.1174	96.8178	96.4901
42	99.1322	99.0507	98.9597	98.8577	98.7440	98.6171	98.4753	98.3166	98.1400	97.9438	97.7260	97.4853	97.2198	96.9283	96.6089
43	99.1644	99.0864	98.9992	98.9016	98.7925	98.6707	98.5345	98.3818	98.2116	98.0223	97.8118	97.5788	97.3213	97.0382	96.7275
44	99.1955	99.1209	99.0376	98.9442	98.8396	98.7229	98.5921	98.4454	98.2817	98.0993	97.8962	97.6710	97.4218	97.1473	96.8456
45	99.2257	99.1544	99.0748	98.9854	98.8854	98.7736	98.6482	98.5074	98.3501	98.1746	97.9789	97.7616	97.5208	97.2552	96.9628
46	99.2548	99.1868	99.1107	99.0254	98.9297	98.8228	98.7027	98.5677	98.4167	98.2481	98.0598	97.8505	97.6181	97.3616	97.0786
47	99.2830	99.2181	99.1455	99.0640	98.9727	98.8704	98.7556	98.6263	98.4815	98.3197	98.1387	97.9374	97.7136	97.4661	97.1928
48	99.3102	99.2483	99.1791	99.1014	99.0142	98.9166	98.8068	98.6831	98.5444	98.3893	98.2156	98.0222	97.8069	97.5686	97.3050
49	99.3365	99.2776	99.2116	99.1375	99.0544	98.9612	98.8563	98.7381	98.6054	98.4569	98.2904	98.1048	97.8981	97.6689	97.4151
50	99.3619	99.3058	99.2430	99.1724	99.0931	99.0043	98.9043	98.7913	98.6645	98.5224	98.3631	98.1852	97.9868	97.7667	97.5227
51	99.3865	99.3331	99.2733	99.2061	99.1306	99.0460	98.9506	98.8428	98.7217	98.5859	98.4334	98.2631	98.0730	97.8619	97.6277
52	99.4103	99.3595	99.3026	99.2386	99.1668	99.0862	98.9953	98.8925	98.7770	98.6473	98.5016	98.3387	98.1568	97.9545	97.7300
53	99.4332	99.3849	99.3309	99.2700	99.2017	99.1250	99.0385	98.9405	98.8304	98.7066	98.5675	98.4119	98.2379	98.0444	97.8294
54	99.4554	99.4096	99.3582	99.3004	99.2354	99.1624	99.0801	98.9868	98.8819	98.7639	98.6312	98.4826	98.3164	98.1315	97.9258
55	99.4769	99.4334	99.3846	99.3296	99.2679	99.1986	99.1203	99.0315	98.9316	98.8192	98.6927	98.5510	98.3924	98.2158	98.0193
56	99.4978	99.4564	99.4101	99.3579	99.2993	99.2335	99.1591	99.0747	98.9796	98.8726	98.7520	98.6170	98.4657	98.2973	98.1097
57	99.5179	99.4787	99.4348	99.3853	99.3297	99.2672	99.1965	99.1163	99.0258	98.9241	98.8093	98.6806	98.5365	98.3760	98.1972
58	99.5375	99.5003	99.4586	99.4117	99.3590	99.2997	99.2326	99.1564	99.0704	98.9737	98.8645	98.7420	98.6048	98.4519	98.2816
59	99.5564	99.5212	99.4817	99.4373	99.3873	99.3310	99.2674	99.1951	99.1134	99.0215	98.9176	98.8012	98.6706	98.5251	98.3630
60	99.5748	99.5414	99.5041	99.4620	99.4146	99.3614	99.3010	99.2324	99.1549	99.0675	98.9689	98.8582	98.7340	98.5957	98.4415
61	99.5926	99.5610	99.5257	99.4859	99.4410	99.3906	99.3335	99.2683	99.1948	99.1119	99.0182	98.9130	98.7951	98.6636	98.5170
62	99.6098	99.5800	99.5467	99.5090	99.4666	99.4189	99.3648	99.3030	99.2333	99.1546	99.0657	98.9658	98.8538	98.7289	98.5897
63	99.6265	99.5984	99.5669	99.5313	99.4912	99.4461	99.3949	99.3365	99.2704	99.1958	99.1114	99.0166	98.9102	98.7917	98.6596
64	99.6427	99.6162	99.5865	99.5529	99.5151	99.4725	99.4241	99.3687	99.3061	99.2354	99.1553	99.0655	98.9645	98.8521	98.7267
65	99.6584	99.6335	99.6055	99.5738	99.5381	99.4979	99.4522	99.3998	99.3405	99.2736	99.1977	99.1124	99.0167	98.9101	98.7912
66	99.6736	99.6501	99.6238	99.5940	99.5604	99.5225	99.4793	99.4298	99.3737	99.3104	99.2384	99.1577	99.0669	98.9658	98.8531
67	99.6883	99.6663	99.6415	99.6135	99.5819	99.5462	99.5055	99.4587	99.4057	99.3458	99.2777	99.2011	99.1151	99.0194	98.9126
68	99.7025	99.6819	99.6587	99.6324	99.6026	99.5691	99.5307	99.4866	99.4366	99.3799	99.3154	99.2430	99.1615	99.0708	98.9698
69	99.7163	99.6970	99.6752	99.6506	99.6227	99.5912	99.5551	99.5136	99.4663	99.4128	99.3518	99.2833	99.2062	99.1203	99.0246
70	99.7296	99.7115	99.6912	99.6681	99.6420	99.6125	99.5786	99.5395	99.4950	99.4445	99.3869	99.3220	99.2491	99.1678	99.0773

TEACHER RETIREMENT SYSTEM OF TEXAS

OPTION 1 FACTORS JOINT AND 100% BENEFICIARY WITH POP-UP FEATURE

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Age of beneficiary	Age of Member at Date of Retirement														
	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
71	99.7424	99.7255	99.7066	99.6851	99.6607	99.6330	99.6013	99.5645	99.5226	99.4750	99.4206	99.3594	99.2904	99.2135	99.1280
72	99.7548	99.7391	99.7214	99.7014	99.6786	99.6528	99.6231	99.5886	99.5493	99.5044	99.4531	99.3953	99.3301	99.2575	99.1766
73	99.7667	99.7521	99.7357	99.7171	99.6959	99.6718	99.6441	99.6118	99.5749	99.5327	99.4844	99.4298	99.3683	99.2997	99.2233
74	99.7783	99.7647	99.7495	99.7322	99.7125	99.6901	99.6643	99.6341	99.5995	99.5599	99.5145	99.4631	99.4050	99.3403	99.2682
75	99.7894	99.7768	99.7627	99.7467	99.7285	99.7077	99.6837	99.6555	99.6232	99.5861	99.5434	99.4951	99.4404	99.3794	99.3113
76	99.8001	99.7885	99.7755	99.7606	99.7438	99.7246	99.7023	99.6761	99.6459	99.6112	99.5712	99.5258	99.4743	99.4169	99.3528
77	99.8105	99.7997	99.7877	99.7740	99.7585	99.7407	99.7202	99.6958	99.6677	99.6354	99.5979	99.5553	99.5069	99.4529	99.3926
78	99.8205	99.8105	99.7994	99.7868	99.7725	99.7562	99.7372	99.7146	99.6886	99.6585	99.6234	99.5836	99.5382	99.4875	99.4308
79	99.8301	99.8210	99.8107	99.7992	99.7860	99.7710	99.7535	99.7327	99.7086	99.6806	99.6479	99.6107	99.5682	99.5207	99.4674
80	99.8395	99.8310	99.8216	99.8110	99.7989	99.7852	99.7691	99.7499	99.7276	99.7017	99.6713	99.6366	99.5970	99.5525	99.5026
81	99.8485	99.8407	99.8320	99.8223	99.8113	99.7987	99.7840	99.7663	99.7458	99.7218	99.6936	99.6614	99.6244	99.5829	99.5362
82	99.8572	99.8500	99.8421	99.8331	99.8231	99.8116	99.7981	99.7819	99.7631	99.7410	99.7149	99.6850	99.6507	99.6119	99.5684
83	99.8656	99.8590	99.8517	99.8436	99.8344	99.8239	99.8117	99.7968	99.7795	99.7592	99.7352	99.7075	99.6756	99.6396	99.5991
84	99.8738	99.8677	99.8610	99.8535	99.8452	99.8357	99.8245	99.8110	99.7952	99.7765	99.7544	99.7289	99.6994	99.6660	99.6284
85	99.8816	99.8760	99.8699	99.8631	99.8555	99.8469	99.8368	99.8245	99.8101	99.7930	99.7727	99.7492	99.7220	99.6911	99.6562
86	99.8893	99.8841	99.8785	99.8723	99.8654	99.8576	99.8484	99.8373	99.8242	99.8086	99.7900	99.7684	99.7433	99.7149	99.6827
87	99.8966	99.8918	99.8867	99.8811	99.8748	99.8678	99.8595	99.8494	99.8375	99.8233	99.8063	99.7866	99.7636	99.7374	99.7077
88	99.9037	99.8993	99.8946	99.8895	99.8838	99.8775	99.8701	99.8609	99.8502	99.8373	99.8218	99.8037	99.7827	99.7586	99.7314
89	99.9105	99.9065	99.9022	99.8975	99.8924	99.8867	99.8800	99.8718	99.8621	99.8505	99.8364	99.8199	99.8007	99.7787	99.7537
90	99.9171	99.9134	99.9095	99.9052	99.9006	99.8955	99.8895	99.8821	99.8734	99.8629	99.8501	99.8352	99.8177	99.7976	99.7748
91	99.9235	99.9201	99.9165	99.9126	99.9084	99.9038	99.8985	99.8919	99.8841	99.8746	99.8631	99.8495	99.8336	99.8153	99.7945
92	99.9296	99.9264	99.9232	99.9196	99.9159	99.9118	99.9070	99.9011	99.8941	99.8856	99.8752	99.8630	99.8486	99.8320	99.8130
93	99.9354	99.9325	99.9295	99.9263	99.9229	99.9193	99.9150	99.9097	99.9035	99.8959	99.8866	99.8756	99.8626	99.8475	99.8303
94	99.9409	99.9383	99.9356	99.9326	99.9296	99.9263	99.9225	99.9178	99.9123	99.9055	99.8971	99.8873	99.8755	99.8619	99.8464
95	99.9461	99.9437	99.9412	99.9386	99.9358	99.9329	99.9295	99.9253	99.9204	99.9144	99.9069	99.8980	99.8875	99.8752	99.8612
96	99.9509	99.9488	99.9465	99.9441	99.9416	99.9390	99.9359	99.9322	99.9278	99.9224	99.9157	99.9078	99.8984	99.8873	99.8746
97	99.9552	99.9533	99.9512	99.9490	99.9467	99.9444	99.9417	99.9384	99.9344	99.9296	99.9236	99.9164	99.9079	99.8979	99.8864
98	99.9589	99.9572	99.9553	99.9533	99.9512	99.9490	99.9466	99.9436	99.9400	99.9356	99.9302	99.9237	99.9159	99.9068	99.8964
99	99.9618	99.9601	99.9584	99.9565	99.9546	99.9526	99.9503	99.9475	99.9443	99.9402	99.9352	99.9292	99.9220	99.9136	99.9039
100	99.9636	99.9620	99.9603	99.9585	99.9567	99.9548	99.9526	99.9500	99.9469	99.9430	99.9382	99.9325	99.9257	99.9176	99.9084

TEACHER RETIREMENT SYSTEM OF TEXAS

OPTION 1 FACTORS JOINT AND 100% BENEFICIARY WITH POP-UP FEATURE

Percentage is applied to the amount of single life service retirement benefit in order to obtain the optional benefit. Each percentage is based on age as of last birthday of member and beneficiary. Benefit reverts to single life amount if beneficiary predeceases member.

Age of beneficiary	Age of Member at Date of Retirement														
	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
71	99.0332	98.9283	98.8126	98.6846	98.5434	98.3864	98.2115	98.0162	97.8045	97.5729	97.3173	97.0327	96.7134	96.3529	95.9434
72	99.0870	98.9880	98.8789	98.7582	98.6252	98.4773	98.3127	98.1289	97.9301	97.7129	97.4735	97.2069	96.9077	96.5695	96.1845
73	99.1388	99.0453	98.9423	98.8286	98.7034	98.5642	98.4094	98.2365	98.0501	97.8467	97.6228	97.3735	97.0937	96.7770	96.4158
74	99.1884	99.1002	99.0032	98.8961	98.7782	98.6474	98.5018	98.3394	98.1646	97.9745	97.7653	97.5327	97.2714	96.9755	96.6374
75	99.2361	99.1529	99.0615	98.9607	98.8498	98.7268	98.5901	98.4376	98.2739	98.0963	97.9012	97.6845	97.4411	97.1651	96.8493
76	99.2818	99.2035	99.1174	99.0225	98.9183	98.8028	98.6744	98.5312	98.3782	98.2124	98.0308	97.8292	97.6029	97.3461	97.0517
77	99.3258	99.2520	99.1710	99.0818	98.9839	98.8754	98.7549	98.6206	98.4775	98.3231	98.1542	97.9670	97.7570	97.5185	97.2447
78	99.3680	99.2986	99.2224	99.1385	99.0466	98.9447	98.8318	98.7058	98.5722	98.4284	98.2716	98.0981	97.9036	97.6826	97.4285
79	99.4084	99.3432	99.2717	99.1929	99.1066	99.0111	98.9051	98.7871	98.6623	98.5286	98.3832	98.2227	98.0429	97.8386	97.6033
80	99.4472	99.3860	99.3189	99.2450	99.1641	99.0745	98.9752	98.8646	98.7482	98.6239	98.4893	98.3410	98.1751	97.9867	97.7693
81	99.4844	99.4271	99.3641	99.2949	99.2190	99.1351	99.0421	98.9385	98.8299	98.7146	98.5900	98.4533	98.3006	98.1271	97.9268
82	99.5199	99.4663	99.4074	99.3426	99.2716	99.1931	99.1060	99.0089	98.9077	98.8007	98.6856	98.5597	98.4195	98.2602	98.0761
83	99.5539	99.5039	99.4489	99.3883	99.3219	99.2484	99.1670	99.0761	98.9818	98.8826	98.7764	98.6607	98.5321	98.3862	98.2174
84	99.5864	99.5398	99.4885	99.4320	99.3700	99.3014	99.2252	99.1402	99.0523	98.9604	98.8624	98.7562	98.6386	98.5053	98.3510
85	99.6173	99.5740	99.5263	99.4737	99.4160	99.3519	99.2808	99.2012	99.1194	99.0343	98.9440	98.8467	98.7393	98.6178	98.4771
86	99.6466	99.6065	99.5623	99.5134	99.4598	99.4002	99.3338	99.2594	99.1833	99.1044	99.0214	98.9323	98.8344	98.7240	98.5961
87	99.6745	99.6374	99.5966	99.5513	99.5016	99.4462	99.3843	99.3148	99.2440	99.1711	99.0946	99.0132	98.9241	98.8240	98.7081
88	99.7008	99.6667	99.6290	99.5873	99.5413	99.4900	99.4325	99.3676	99.3017	99.2343	99.1640	99.0896	99.0087	98.9182	98.8135
89	99.7257	99.6944	99.6598	99.6214	99.5791	99.5316	99.4783	99.4178	99.3566	99.2943	99.2297	99.1618	99.0885	99.0068	98.9125
90	99.7491	99.7205	99.6888	99.6536	99.6148	99.5711	99.5218	99.4655	99.4088	99.3512	99.2919	99.2299	99.1636	99.0901	99.0054
91	99.7711	99.7450	99.7161	99.6840	99.6485	99.6085	99.5630	99.5108	99.4582	99.4051	99.3506	99.2942	99.2342	99.1682	99.0924
92	99.7917	99.7680	99.7417	99.7125	99.6802	99.6437	99.6020	99.5536	99.5050	99.4560	99.4061	99.3547	99.3004	99.2413	99.1737
93	99.8110	99.7894	99.7656	99.7392	99.7099	99.6767	99.6386	99.5939	99.5492	99.5041	99.4583	99.4115	99.3625	99.3095	99.2494
94	99.8289	99.8093	99.7878	99.7639	99.7375	99.7075	99.6728	99.6317	99.5906	99.5492	99.5073	99.4647	99.4204	99.3730	99.3196
95	99.8454	99.8277	99.8082	99.7867	99.7629	99.7358	99.7044	99.6667	99.6290	99.5912	99.5529	99.5141	99.4741	99.4316	99.3842
96	99.8603	99.8443	99.8267	99.8073	99.7859	99.7615	99.7331	99.6987	99.6642	99.6296	99.5946	99.5593	99.5230	99.4849	99.4427
97	99.8735	99.8590	99.8430	99.8254	99.8061	99.7842	99.7585	99.7270	99.6954	99.6637	99.6318	99.5996	99.5666	99.5321	99.4943
98	99.8845	99.8713	99.8567	99.8407	99.8231	99.8031	99.7798	99.7508	99.7217	99.6926	99.6633	99.6337	99.6035	99.5720	99.5377
99	99.8929	99.8806	99.8671	99.8522	99.8359	99.8174	99.7958	99.7688	99.7417	99.7146	99.6872	99.6597	99.6316	99.6024	99.5707
100	99.8980	99.8862	99.8733	99.8591	99.8436	99.8261	99.8055	99.7797	99.7538	99.7279	99.7018	99.6756	99.6488	99.6210	99.5908

TEACHER RETIREMENT SYSTEM OF TEXAS

OPTION 1 FACTORS JOINT AND 100% BENEFICIARY WITH POP-UP FEATURE

Percentage is applied to the amount of single life service retirement benefit in order to obtain the optional benefit. Each percentage is based on age as of last birthday of member and beneficiary. Benefit reverts to single life amount if beneficiary predeceases member.

Age of beneficiary	Age of Member at Date of Retirement														
	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
71	95.4764	94.9418	94.3288	93.6479	92.8940	92.0605	91.1421	90.1323	89.0259	87.8171	86.5014	85.0745	83.5331	81.8744	80.0975
72	95.7445	95.2393	94.6581	94.0116	93.2946	92.5005	91.6236	90.6574	89.5963	88.4342	87.1661	85.7870	84.2931	82.6808	80.9485
73	96.0021	95.5257	94.9758	94.3633	93.6828	92.9278	92.0927	91.1705	90.1555	89.0413	87.8224	86.4933	85.0494	83.4867	81.8026
74	96.2491	95.8008	95.2816	94.7024	94.0580	93.3419	92.5483	91.6703	90.7019	89.6365	88.4681	87.1908	85.7994	84.2891	82.6566
75	96.4858	96.0647	95.5754	95.0287	94.4198	93.7421	92.9897	92.1558	91.2343	90.2181	89.1012	87.8771	86.5402	85.0849	83.5073
76	96.7120	96.3174	95.8570	95.3422	94.7680	94.1279	93.4163	92.6262	91.7514	90.7848	89.7200	88.5502	87.2693	85.8713	84.3513
77	96.9280	96.5588	96.1266	95.6427	95.1023	94.4991	93.8276	93.0807	92.2523	91.3353	90.3229	89.2082	87.9846	86.6455	85.1855
78	97.1338	96.7893	96.3842	95.9302	95.4228	94.8555	94.2232	93.5189	92.7364	91.8685	90.9086	89.8493	88.6838	87.4050	86.0070
79	97.3298	97.0088	96.6300	96.2049	95.7293	95.1970	94.6029	93.9402	93.2029	92.3837	91.4759	90.4720	89.3651	88.1476	86.8132
80	97.5160	97.2177	96.8640	96.4668	96.0220	95.5236	94.9667	94.3446	93.6515	92.8801	92.0239	91.0752	90.0269	88.8713	87.6015
81	97.6928	97.4162	97.0866	96.7162	96.3010	95.8354	95.3144	94.7318	94.0818	93.3574	92.5519	91.6578	90.6679	89.5742	88.3697
82	97.8605	97.6045	97.2980	96.9532	96.5665	96.1324	95.6462	95.1019	94.4938	93.8151	93.0593	92.2191	91.2870	90.2550	89.1159
83	98.0192	97.7829	97.4984	97.1782	96.8188	96.4149	95.9622	95.4549	94.8873	94.2531	93.5459	92.7583	91.8831	90.9124	89.8385
84	98.1693	97.9517	97.6882	97.3915	97.0581	96.6832	96.2627	95.7908	95.2625	94.6714	94.0113	93.2752	92.4558	91.5453	90.5360
85	98.3110	98.1112	97.8677	97.5932	97.2847	96.9376	96.5478	96.1101	95.6195	95.0699	94.4555	93.7693	93.0044	92.1529	91.2074
86	98.4447	98.2617	98.0371	97.7838	97.4990	97.1782	96.8178	96.4128	95.9583	95.4488	94.8784	94.2406	93.5286	92.7348	91.8518
87	98.5706	98.4035	98.1968	97.9636	97.7012	97.4056	97.0731	96.6992	96.2794	95.8082	95.2802	94.6890	94.0282	93.2904	92.4684
88	98.6890	98.5368	98.3471	98.1329	97.8918	97.6199	97.3141	96.9698	96.5830	96.1484	95.6610	95.1147	94.5033	93.8196	93.0568
89	98.8002	98.6621	98.4883	98.2920	98.0710	97.8218	97.5411	97.2250	96.8696	96.4699	96.0213	95.5179	94.9539	94.3224	93.6169
90	98.9044	98.7796	98.6208	98.4414	98.2394	98.0114	97.7545	97.4651	97.1394	96.7729	96.3612	95.8988	95.3802	94.7988	94.1485
91	99.0020	98.8895	98.7448	98.5813	98.3971	98.1891	97.9547	97.6904	97.3929	97.0578	96.6811	96.2577	95.7823	95.2489	94.6514
92	99.0931	98.9920	98.8606	98.7120	98.5445	98.3553	98.1420	97.9014	97.6303	97.3249	96.9813	96.5948	96.1605	95.6726	95.1256
93	99.1778	99.0874	98.9683	98.8335	98.6817	98.5100	98.3165	98.0980	97.8518	97.5742	97.2618	96.9101	96.5145	96.0698	95.5707
94	99.2561	99.1756	99.0679	98.9460	98.8087	98.6534	98.4781	98.2803	98.0573	97.8057	97.5223	97.2032	96.8440	96.4398	95.9859
95	99.3280	99.2565	99.1593	99.0492	98.9252	98.7849	98.6266	98.4478	98.2462	98.0186	97.7622	97.4732	97.1478	96.7814	96.3695
96	99.3930	99.3295	99.2418	99.1425	99.0305	98.9038	98.7608	98.5993	98.4171	98.2114	97.9795	97.7180	97.4234	97.0915	96.7182
97	99.4502	99.3936	99.3142	99.2244	99.1230	99.0084	98.8789	98.7326	98.5676	98.3812	98.1710	97.9339	97.6667	97.3655	97.0266
98	99.4980	99.4472	99.3748	99.2928	99.2004	99.0958	98.9776	98.8441	98.6935	98.5233	98.3314	98.1148	97.8707	97.5955	97.2856
99	99.5342	99.4875	99.4203	99.3443	99.2586	99.1615	99.0520	98.9281	98.7884	98.6305	98.4523	98.2514	98.0248	97.7692	97.4814
100	99.5561	99.5118	99.4479	99.3754	99.2938	99.2013	99.0969	98.9789	98.8458	98.6953	98.5256	98.3340	98.1181	97.8744	97.6001

TEACHER RETIREMENT SYSTEM OF TEXAS

OPTION 1 FACTORS JOINT AND 100% BENEFICIARY WITH POP-UP FEATURE

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Age of beneficiary	Age of Member at Date of Retirement														
	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89
36	61.1072	59.0288	56.9042	54.7385	52.5373	50.3064	48.0521	45.7816	43.5018	41.2204	38.9448	36.6829	34.4445	32.2397	30.0744
37	61.2686	59.1862	57.0573	54.8870	52.6810	50.4450	48.1855	45.9095	43.6241	41.3369	39.0554	36.7876	34.5432	32.3325	30.1613
38	61.4410	59.3544	57.2209	55.0459	52.8348	50.5934	48.3283	46.0466	43.7552	41.4619	39.1743	36.9001	34.6494	32.4324	30.2548
39	61.6249	59.5338	57.3957	55.2155	52.9991	50.7521	48.4811	46.1933	43.8956	41.5958	39.3016	37.0207	34.7633	32.5395	30.3552
40	61.8211	59.7254	57.5823	55.3969	53.1748	50.9219	48.6447	46.3503	44.0460	41.7393	39.4381	37.1501	34.8855	32.6545	30.4630
41	62.0302	59.9298	57.7814	55.5904	53.3624	51.1032	48.8194	46.5183	44.2069	41.8929	39.5843	37.2887	35.0164	32.7778	30.5787
42	62.2530	60.1475	57.9937	55.7969	53.5626	51.2968	49.0061	46.6977	44.3788	42.0572	39.7406	37.4371	35.1567	32.9099	30.7026
43	62.4902	60.3795	58.2200	56.0170	53.7762	51.5034	49.2054	46.8893	44.5625	42.2327	39.9078	37.5957	35.3067	33.0513	30.8353
44	62.7426	60.6265	58.4611	56.2516	54.0039	51.7237	49.4180	47.0939	44.7587	42.4203	40.0865	37.7654	35.4672	33.2026	30.9774
45	63.0111	60.8895	58.7179	56.5017	54.2466	51.9588	49.6449	47.3122	44.9682	42.6206	40.2774	37.9467	35.6388	33.3644	31.1294
46	63.2965	61.1691	58.9912	56.7679	54.5053	52.2093	49.8868	47.5451	45.1916	42.8343	40.4812	38.1403	35.8221	33.5373	31.2919
47	63.6000	61.4667	59.2821	57.0515	54.7810	52.4764	50.1449	47.7936	45.4302	43.0626	40.6989	38.3472	36.0180	33.7221	31.4656
48	63.9222	61.7829	59.5915	57.3534	55.0745	52.7610	50.4199	48.0587	45.6847	43.3062	40.9312	38.5680	36.2272	33.9196	31.6513
49	64.2643	62.1190	59.9207	57.6747	55.3872	53.0644	50.7133	48.3414	45.9563	43.5662	41.1793	38.8039	36.4507	34.1306	31.8497
50	64.6272	62.4759	60.2704	58.0165	55.7201	53.3875	51.0259	48.6429	46.2460	43.8437	41.4442	39.0558	36.6894	34.3559	32.0617
51	65.0120	62.8547	60.6421	58.3800	56.0744	53.7317	51.3592	48.9644	46.5552	44.1400	41.7270	39.3249	36.9444	34.5967	32.2882
52	65.4196	63.2564	61.0368	58.7663	56.4513	54.0982	51.7142	49.3072	46.8851	44.4562	42.0290	39.6122	37.2168	34.8540	32.5303
53	65.8511	63.6823	61.4556	59.1768	56.8523	54.4884	52.0926	49.6729	47.2370	44.7938	42.3516	39.9193	37.5080	35.1290	32.7890
54	66.3076	64.1335	61.9001	59.6130	57.2788	54.9039	52.4960	50.0630	47.6129	45.1545	42.6966	40.2478	37.8197	35.4236	33.0662
55	66.7902	64.6114	62.3715	60.0763	57.7325	55.3465	52.9261	50.4794	48.0146	45.5404	43.0658	40.5998	38.1538	35.7394	33.3636
56	67.2999	65.1170	62.8712	60.5682	58.2148	55.8178	53.3847	50.9240	48.4438	45.9533	43.4613	40.9771	38.5122	36.0786	33.6832
57	67.8375	65.6514	63.4002	61.0900	58.7274	56.3193	53.8735	51.3984	48.9026	46.3950	43.8850	41.3817	38.8970	36.4430	34.0268
58	68.4038	66.2155	63.9598	61.6428	59.2714	56.8525	54.3940	51.9045	49.3926	46.8675	44.3387	41.8155	39.3100	36.8346	34.3964
59	68.9991	66.8097	64.5505	62.2277	59.8481	57.4187	54.9477	52.4437	49.9155	47.3725	44.8242	42.2804	39.7532	37.2553	34.7940
60	69.6235	67.4346	65.1732	62.8455	60.4585	58.0192	55.5360	53.0175	50.4729	47.9116	45.3434	42.7782	40.2284	37.7069	35.2213
61	70.2769	68.0901	65.8280	63.4966	61.1032	58.6547	56.1598	53.6272	51.0660	48.4862	45.8976	43.3104	40.7372	38.1911	35.6800
62	70.9587	68.7760	66.5148	64.1813	61.7825	59.3259	56.8198	54.2734	51.6959	49.0975	46.4881	43.8781	41.2807	38.7090	36.1713
63	71.6684	69.4919	67.2336	64.8996	62.4970	60.0332	57.5169	54.9572	52.3637	49.7465	47.1161	44.4829	41.8604	39.2621	36.6965
64	72.4051	70.2374	67.9841	65.6516	63.2469	60.7775	58.2520	55.6799	53.0707	50.4350	47.7834	45.1265	42.4782	39.8525	37.2579
65	73.1681	71.0118	68.7663	66.4376	64.0328	61.5594	59.0262	56.4426	53.8186	51.1647	48.4919	45.8111	43.1365	40.4824	37.8577
66	73.9559	71.8143	69.5794	67.2572	64.8547	62.3794	59.8401	57.2465	54.6086	51.9372	49.2434	46.5386	43.8372	41.1540	38.4982
67	74.7672	72.6435	70.4224	68.1097	65.7123	63.2375	60.6943	58.0924	55.4419	52.7539	50.0397	47.3110	44.5826	41.8697	39.1818
68	75.5998	73.4979	71.2942	68.9944	66.6051	64.1337	61.5891	58.9809	56.3195	53.6161	50.8823	48.1301	45.3747	42.6316	39.9109
69	76.4516	74.3753	72.1930	69.9098	67.5323	65.0675	62.5243	59.9124	57.2421	54.5250	51.7728	48.9978	46.2156	43.4422	40.6880
70	77.3201	75.2736	73.1168	70.8544	68.4925	66.0380	63.4996	60.8870	58.2104	55.4816	52.7126	49.9159	47.1074	44.3038	41.5157

TEACHER RETIREMENT SYSTEM OF TEXAS

OPTION 1 FACTORS JOINT AND 100% BENEFICIARY WITH POP-UP FEATURE

Percentage is applied to the amount of single life service retirement benefit in order to obtain the optional benefit. Each percentage is based on age as of last birthday of member and beneficiary. Benefit reverts to single life amount if beneficiary predeceases member.

Age of beneficiary	Age of Member at Date of Retirement														
	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89
71	78.2023	76.1900	74.0631	71.8259	69.4840	67.0440	64.5142	61.9042	59.2245	56.4865	53.7027	50.8857	48.0519	45.2184	42.3964
72	79.0952	77.1215	75.0292	72.8219	70.5047	68.0836	65.5668	62.9635	60.2841	57.5401	54.7440	51.9087	49.0510	46.1885	43.3327
73	79.9954	78.0648	76.0119	73.8394	71.5519	69.1549	66.6558	64.0637	61.3887	58.6423	55.8370	52.9859	50.1062	47.2159	44.3270
74	80.8995	79.0165	77.0077	74.8752	72.6227	70.2549	67.7787	65.2029	62.5370	59.7925	56.9817	54.1179	51.2187	48.3024	45.3815
75	81.8039	79.9727	78.0129	75.9256	73.7135	71.3806	68.9331	66.3790	63.7275	60.9897	58.1778	55.3052	52.3894	49.4495	46.4983
76	82.7051	80.9299	79.0237	76.9867	74.8206	72.5284	70.1155	67.5891	64.9578	62.2323	59.4243	56.5473	53.6190	50.6585	47.6792
77	83.5997	81.8840	80.0359	78.0542	75.9397	73.6943	71.3223	68.8300	66.2252	63.5180	60.7198	57.8436	54.9072	51.9301	48.9257
78	84.4841	82.8315	81.0455	79.1240	77.0665	74.8738	72.5491	70.0976	67.5261	64.8440	62.0620	59.1927	56.2536	53.2645	50.2389
79	85.3554	83.7687	82.0485	80.1915	78.1962	76.0622	73.7912	71.3874	68.8565	66.2067	63.4480	60.5922	57.6567	54.6612	51.6192
80	86.2105	84.6922	83.0409	81.2526	79.3244	77.2546	75.0438	72.6947	70.2118	67.6019	64.8741	62.0395	59.1147	56.1192	53.0665
81	87.0468	85.5987	84.0191	82.3029	80.4462	78.4461	76.3016	74.0141	71.5866	69.0247	66.3361	63.5307	60.6245	57.6366	54.5799
82	87.8618	86.4854	84.9796	83.3386	81.5573	79.6315	77.5592	75.3400	72.9755	70.4697	67.8288	65.0614	62.1826	59.2105	56.1576
83	88.6535	87.3496	85.9192	84.3557	82.6530	80.8060	78.8111	76.6666	74.3723	71.9307	69.3464	66.6263	63.7841	60.8371	57.7969
84	89.4200	88.1889	86.8350	85.3508	83.7295	81.9648	80.0520	77.9880	75.7709	73.4015	70.8825	68.2192	65.4236	62.5118	59.4941
85	90.1597	89.0014	87.7244	86.3206	84.7827	83.1034	81.2768	79.2984	77.1649	74.8752	72.4303	69.8333	67.0945	64.2285	61.2440
86	90.8714	89.7853	88.5850	87.2623	85.8090	84.2173	82.4802	80.5920	78.5478	76.3449	73.9822	71.4610	68.7895	65.9804	63.0405
87	91.5540	90.5391	89.4150	88.1732	86.8054	85.3028	83.6578	81.8634	79.9135	77.8036	75.5309	73.0945	70.5005	67.7596	64.8764
88	92.2069	91.2618	90.2129	89.0515	87.7691	86.3565	84.8052	83.1075	81.2560	79.2447	77.0690	74.7258	72.2193	69.5578	66.7437
89	92.8296	91.9525	90.9773	89.8953	88.6978	87.3752	85.9188	84.3198	82.5699	80.6619	78.5892	76.3471	73.9374	71.3663	68.6335
90	93.4216	92.6107	91.7074	90.7032	89.5894	88.3564	86.9949	85.4959	83.8499	82.0487	80.0843	77.9501	75.6458	73.1753	70.5360
91	93.9828	93.2357	92.4022	91.4739	90.4422	89.2976	88.0305	86.6317	85.0910	83.3993	81.5473	79.5266	77.3353	74.9751	72.4407
92	94.5127	93.8270	93.0607	92.2060	91.2542	90.1962	89.0223	87.7231	86.2880	84.7073	82.9706	81.0681	78.9961	76.7545	74.3356
93	95.0109	94.3837	93.6820	92.8979	92.0235	91.0496	89.9669	88.7658	87.4357	85.9663	84.3465	82.5654	80.6177	78.5017	76.2075
94	95.4762	94.9045	94.2641	93.5476	92.7473	91.8545	90.8600	89.7546	88.5276	87.1685	85.6658	84.0075	82.1874	80.2023	78.0403
95	95.9066	95.3870	94.8043	94.1515	93.4214	92.6058	91.6957	90.6823	89.5552	88.3038	86.9164	85.3807	83.6891	81.8378	79.8132
96	96.2985	95.8268	95.2973	94.7036	94.0389	93.2952	92.4644	91.5378	90.5054	89.3571	88.0809	86.6644	85.0995	83.3815	81.4959
97	96.6453	96.2165	95.7348	95.1943	94.5885	93.9101	93.1514	92.3041	91.3588	90.3058	89.1334	87.8291	86.3846	84.7949	83.0447
98	96.9368	96.5444	96.1034	95.6082	95.0529	94.4306	93.7340	92.9554	92.0859	91.1162	90.0353	88.8307	87.4941	86.0206	84.3947
99	97.1574	96.7928	96.3829	95.9225	95.4060	94.8269	94.1783	93.4530	92.6426	91.7382	90.7293	89.6039	88.3537	86.9741	85.4496
100	97.2912	96.9436	96.5527	96.1135	95.6207	95.0682	94.4492	93.7568	92.9829	92.1190	91.1550	90.0792	88.8836	87.5635	86.1039

TEACHER RETIREMENT SYSTEM OF TEXAS

OPTION 1 FACTORS JOINT AND 100% BENEFICIARY WITH POP-UP FEATURE

Percentage is applied to the amount of single life service retirement benefit in order to obtain the optional benefit. Each percentage is based on age as of last birthday of member and beneficiary. Benefit reverts to single life amount if beneficiary predeceases member.

Age of beneficiary	Age of Member at Date of Retirement										
	90	91	92	93	94	95	96	97	98	99	100
1	26.9588	24.9686	23.0404	21.1775	19.3890	17.6773	16.0523	14.5321	13.1359	11.9062	10.9234
2	26.9646	24.9739	23.0451	21.1817	19.3927	17.6806	16.0552	14.5346	13.1380	11.9081	10.9251
3	26.9718	24.9805	23.0511	21.1872	19.3976	17.6850	16.0591	14.5381	13.1411	11.9108	10.9276
4	26.9800	24.9880	23.0580	21.1935	19.4033	17.6901	16.0638	14.5423	13.1448	11.9142	10.9307
5	26.9892	24.9965	23.0659	21.2006	19.4098	17.6960	16.0691	14.5471	13.1492	11.9181	10.9342
6	26.9993	25.0059	23.0745	21.2086	19.4171	17.7026	16.0751	14.5525	13.1540	11.9224	10.9382
7	27.0104	25.0162	23.0840	21.2173	19.4251	17.7099	16.0817	14.5584	13.1593	11.9273	10.9426
8	27.0224	25.0273	23.0944	21.2269	19.4338	17.7179	16.0889	14.5650	13.1653	11.9326	10.9476
9	27.0353	25.0394	23.1055	21.2372	19.4433	17.7266	16.0968	14.5722	13.1718	11.9385	10.9530
10	27.0490	25.0522	23.1174	21.2482	19.4535	17.7359	16.1054	14.5799	13.1788	11.9449	10.9588
11	27.0635	25.0657	23.1300	21.2599	19.4643	17.7458	16.1144	14.5882	13.1863	11.9518	10.9651
12	27.0786	25.0798	23.1432	21.2721	19.4756	17.7562	16.1239	14.5968	13.1942	11.9589	10.9717
13	27.0943	25.0946	23.1569	21.2848	19.4873	17.7670	16.1338	14.6058	13.2024	11.9664	10.9786
14	27.1108	25.1100	23.1712	21.2981	19.4995	17.7782	16.1440	14.6152	13.2109	11.9741	10.9857
15	27.1282	25.1261	23.1863	21.3120	19.5124	17.7900	16.1548	14.6250	13.2198	11.9823	10.9932
16	27.1463	25.1431	23.2020	21.3266	19.5258	17.8023	16.1661	14.6352	13.2291	11.9907	11.0010
17	27.1654	25.1609	23.2185	21.3419	19.5399	17.8152	16.1779	14.6460	13.2389	11.9996	11.0092
18	27.1855	25.1796	23.2359	21.3579	19.5546	17.8287	16.1902	14.6572	13.2491	12.0089	11.0177
19	27.2069	25.1995	23.2543	21.3749	19.5702	17.8430	16.2033	14.6691	13.2598	12.0187	11.0267
20	27.2296	25.2205	23.2738	21.3928	19.5867	17.8581	16.2170	14.6815	13.2711	12.0289	11.0361
21	27.2539	25.2430	23.2945	21.4119	19.6042	17.8741	16.2315	14.6947	13.2831	12.0398	11.0461
22	27.2799	25.2671	23.3167	21.4323	19.6229	17.8911	16.2470	14.7088	13.2958	12.0513	11.0567
23	27.3079	25.2930	23.3407	21.4543	19.6430	17.9095	16.2636	14.7238	13.3094	12.0636	11.0680
24	27.3382	25.3211	23.3666	21.4781	19.6648	17.9293	16.2816	14.7401	13.3240	12.0769	11.0802
25	27.3711	25.3516	23.3947	21.5040	19.6885	17.9509	16.3012	14.7578	13.3400	12.0914	11.0935
26	27.4068	25.3847	23.4252	21.5320	19.7142	17.9743	16.3225	14.7770	13.3575	12.1072	11.1080
27	27.4453	25.4203	23.4582	21.5624	19.7420	17.9997	16.3455	14.7979	13.3763	12.1243	11.1237
28	27.4869	25.4590	23.4939	21.5952	19.7721	18.0272	16.3705	14.8206	13.3968	12.1429	11.1407
29	27.5317	25.5005	23.5323	21.6306	19.8045	18.0567	16.3974	14.8449	13.4189	12.1629	11.1591
30	27.5800	25.5453	23.5737	21.6687	19.8394	18.0886	16.4264	14.8712	13.4426	12.1844	11.1789
31	27.6320	25.5936	23.6183	21.7097	19.8771	18.1230	16.4577	14.8995	13.4683	12.2077	11.2002
32	27.6880	25.6455	23.6663	21.7539	19.9176	18.1600	16.4913	14.9300	13.4958	12.2327	11.2232
33	27.7483	25.7015	23.7180	21.8016	19.9613	18.1999	16.5276	14.9629	13.5256	12.2597	11.2479
34	27.8131	25.7617	23.7737	21.8528	20.0083	18.2428	16.5666	14.9982	13.5576	12.2887	11.2746
35	27.8831	25.8266	23.8338	21.9081	20.0590	18.2891	16.6087	15.0364	13.5921	12.3200	11.3033

TEACHER RETIREMENT SYSTEM OF TEXAS

OPTION 1 FACTORS JOINT AND 100% BENEFICIARY WITH POP-UP FEATURE

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Age of beneficiary	Age of Member at Date of Retirement										
	90	91	92	93	94	95	96	97	98	99	100
36	27.9584	25.8966	23.8985	21.9678	20.1137	18.3391	16.6541	15.0776	13.6294	12.3539	11.3344
37	28.0395	25.9719	23.9682	22.0320	20.1727	18.3929	16.7031	15.1220	13.6696	12.3903	11.3679
38	28.1268	26.0530	24.0433	22.1012	20.2362	18.4510	16.7560	15.1700	13.7130	12.4297	11.4040
39	28.2205	26.1402	24.1240	22.1757	20.3046	18.5135	16.8128	15.2215	13.7597	12.4721	11.4429
40	28.3212	26.2338	24.2108	22.2557	20.3781	18.5807	16.8741	15.2771	13.8100	12.5178	11.4849
41	28.4292	26.3344	24.3040	22.3417	20.4572	18.6530	16.9399	15.3369	13.8642	12.5670	11.5301
42	28.5451	26.4422	24.4040	22.4340	20.5420	18.7307	17.0107	15.4011	13.9224	12.6198	11.5786
43	28.6692	26.5578	24.5112	22.5330	20.6330	18.8140	17.0866	15.4701	13.9849	12.6766	11.6308
44	28.8021	26.6816	24.6260	22.6391	20.7306	18.9034	17.1681	15.5441	14.0520	12.7375	11.6868
45	28.9443	26.8142	24.7491	22.7528	20.8352	18.9991	17.2554	15.6234	14.1239	12.8029	11.7469
46	29.0964	26.9560	24.8807	22.8745	20.9472	19.1017	17.3490	15.7084	14.2010	12.8730	11.8113
47	29.2591	27.1077	25.0217	23.0048	21.0672	19.2117	17.4493	15.7996	14.2837	12.9481	11.8804
48	29.4330	27.2700	25.1724	23.1443	21.1956	19.3294	17.5567	15.8973	14.3723	13.0287	11.9544
49	29.6189	27.4434	25.3336	23.2935	21.3331	19.4555	17.6718	16.0020	14.4673	13.1151	12.0338
50	29.8176	27.6288	25.5060	23.4530	21.4801	19.5903	17.7949	16.1140	14.5691	13.2076	12.1190
51	30.0299	27.8270	25.6902	23.6236	21.6373	19.7346	17.9267	16.2340	14.6780	13.3067	12.2101
52	30.2567	28.0387	25.8870	23.8057	21.8052	19.8887	18.0674	16.3621	14.7944	13.4126	12.3076
53	30.4992	28.2650	26.0974	24.0004	21.9846	20.0532	18.2177	16.4989	14.9186	13.5257	12.4116
54	30.7590	28.5075	26.3228	24.2090	22.1768	20.2295	18.3787	16.6453	15.0515	13.6466	12.5228
55	31.0379	28.7679	26.5648	24.4329	22.3831	20.4187	18.5514	16.8025	15.1942	13.7764	12.6422
56	31.3376	29.0479	26.8251	24.6740	22.6052	20.6224	18.7374	16.9716	15.3478	13.9161	12.7707
57	31.6602	29.3494	27.1057	24.9338	22.8447	20.8421	18.9380	17.1541	15.5135	14.0667	12.9093
58	32.0076	29.6744	27.4083	25.2143	23.1035	21.0796	19.1549	17.3515	15.6926	14.2297	13.0591
59	32.3817	30.0246	27.7348	25.5171	23.3831	21.3364	19.3897	17.5653	15.8868	14.4063	13.2216
60	32.7842	30.4020	28.0870	25.8442	23.6853	21.6143	19.6439	17.7969	16.0973	14.5980	13.3979
61	33.2168	30.8081	28.4664	26.1969	24.0116	21.9146	19.9190	18.0478	16.3255	14.8059	13.5893
62	33.6806	31.2439	28.8740	26.5762	24.3629	22.2382	20.2156	18.3186	16.5721	15.0306	13.7963
63	34.1771	31.7109	29.3112	26.9834	24.7402	22.5862	20.5348	18.6102	16.8376	15.2728	14.0195
64	34.7083	32.2112	29.7799	27.4204	25.1456	22.9602	20.8782	18.9240	17.1237	15.5338	14.2600
65	35.2767	32.7470	30.2826	27.8895	25.5812	23.3624	21.2476	19.2620	17.4319	15.8151	14.5194
66	35.8844	33.3208	30.8215	28.3930	26.0491	23.7949	21.6453	19.6260	17.7640	16.1185	14.7992
67	36.5340	33.9349	31.3990	28.9332	26.5518	24.2600	22.0733	20.0181	18.1221	16.4457	15.1011
68	37.2281	34.5920	32.0179	29.5129	27.0917	24.7602	22.5341	20.4405	18.5081	16.7986	15.4269
69	37.9691	35.2948	32.6808	30.1347	27.6717	25.2981	23.0301	20.8958	18.9245	17.1796	15.7788
70	38.7599	36.0461	33.3907	30.8015	28.2946	25.8765	23.5642	21.3864	19.3737	17.5909	16.1588

TEACHER RETIREMENT SYSTEM OF TEXAS

OPTION 1 FACTORS JOINT AND 100% BENEFICIARY WITH POP-UP FEATURE

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Age of beneficiary	Age of Member at Date of Retirement										
	90	91	92	93	94	95	96	97	98	99	100
71	39.6032	36.8489	34.1505	31.5165	28.9635	26.4985	24.1392	21.9153	19.8583	18.0350	16.5694
72	40.5017	37.7060	34.9634	32.2828	29.6817	27.1674	24.7584	22.4856	20.3814	18.5147	17.0131
73	41.4582	38.6205	35.8326	33.1039	30.4525	27.8865	25.4252	23.1004	20.9461	19.0331	17.4930
74	42.4753	39.5955	36.7613	33.9830	31.2796	28.6595	26.1431	23.7635	21.5558	19.5934	18.0120
75	43.5556	40.6338	37.7530	34.9240	32.1667	29.4903	26.9161	24.4786	22.2143	20.1992	18.5737
76	44.7016	41.7385	38.8110	35.9304	33.1178	30.3830	27.7483	25.2498	22.9255	20.8544	19.1816
77	45.9153	42.9123	39.9384	37.0059	34.1368	31.3417	28.6440	26.0814	23.6938	21.5631	19.8398
78	47.1987	44.1576	41.1385	38.1542	35.2278	32.3708	29.6078	26.9783	24.5239	22.3299	20.5528
79	48.5530	45.4768	42.4142	39.3789	36.3950	33.4749	30.6445	27.9452	25.4206	23.1597	21.3252
80	49.9791	46.8715	43.7682	40.6835	37.6425	34.6587	31.7592	28.9875	26.3894	24.0578	22.1623
81	51.4771	48.3430	45.2027	42.0710	38.9743	35.9267	32.9570	30.1107	27.4359	25.0298	23.0697
82	53.0465	49.8919	46.7194	43.5443	40.3940	37.2836	34.2431	31.3205	28.5662	26.0821	24.0534
83	54.6856	51.5177	48.3191	45.1054	41.9050	38.7336	35.6227	32.6226	29.7865	27.2209	25.1199
84	56.3919	53.2192	50.0020	46.7558	43.5100	40.2808	37.1010	34.0232	31.1034	28.4532	26.2763
85	58.1615	54.9938	51.7668	48.4959	45.2109	41.9283	38.6823	35.5277	32.5232	29.7859	27.5297
86	59.9891	56.8376	53.6113	50.3248	47.0084	43.6786	40.3705	37.1413	34.0523	31.2261	28.8874
87	61.8684	58.7454	55.5315	52.2404	48.9022	45.5331	42.1689	38.8686	35.6963	32.7804	30.3568
88	63.7922	60.7110	57.5228	54.2397	50.8912	47.4926	44.0801	40.7143	37.4617	34.4562	31.9458
89	65.7520	62.7270	59.5790	56.3183	52.9729	49.5570	46.1063	42.6826	39.3544	36.2611	33.6631
90	67.7382	64.7843	61.6923	58.4698	55.1431	51.7243	48.2479	44.7765	41.3797	38.2023	35.5170
91	69.7400	66.8721	63.8526	60.6857	57.3953	53.9905	50.5039	46.9979	43.5425	40.2869	37.5163
92	71.7447	68.9779	66.0478	62.9550	59.7201	56.3488	52.8704	49.3460	45.8451	42.5202	39.6685
93	73.7380	71.0866	68.2625	65.2627	62.1043	58.7883	55.3399	51.8173	48.2880	44.9064	41.9807
94	75.7023	73.1789	70.4766	67.5886	64.5282	61.2912	57.8975	54.4011	50.8652	47.4442	44.4550
95	77.6144	75.2297	72.6630	69.9041	66.9627	63.8292	60.5177	57.0759	53.5608	50.1236	47.0869
96	79.4404	77.2013	74.7804	72.1647	69.3606	66.3537	63.1519	59.7960	56.3342	52.9106	49.8491
97	81.1310	79.0386	76.7678	74.3034	71.6492	68.7871	65.7191	62.4794	59.1063	55.7325	52.6761
98	82.6128	80.6592	78.5330	76.2177	73.7156	71.0059	68.0862	64.9853	61.7324	58.4470	55.4334
99	83.7768	81.9394	79.9366	77.7511	75.3844	72.8146	70.0369	67.0763	63.9561	60.7850	57.8502
100	84.5015	82.7402	80.8189	78.7205	76.4463	73.9744	71.2992	68.4437	65.4290	62.3578	59.5058

SECTION II

TEACHER RETIREMENT SYSTEM OF TEXAS

OPTION 2 FACTORS JOINT AND 50% BENEFICIARY WITH POP-UP FEATURE

Percentage is applied to the amount of single life service retirement benefit in order to obtain the optional benefit. Each percentage is based on age as of last birthday of member and beneficiary. Benefit reverts to single life amount if beneficiary predeceases member.

Age of beneficiary	Age of Member at Date of Retirement														
	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1	99.6076	99.5776	99.5459	99.5121	99.4763	99.4383	99.3975	99.3539	99.3072	99.2570	99.2028	99.1439	99.0798	99.0107	98.9359
2	99.6133	99.5835	99.5521	99.5185	99.4829	99.4452	99.4045	99.3611	99.3146	99.2646	99.2105	99.1518	99.0879	99.0189	98.9442
3	99.6193	99.5898	99.5586	99.5252	99.4899	99.4523	99.4119	99.3687	99.3223	99.2725	99.2187	99.1601	99.0964	99.0276	98.9531
4	99.6255	99.5962	99.5653	99.5322	99.4971	99.4598	99.4196	99.3766	99.3305	99.2809	99.2273	99.1689	99.1054	99.0368	98.9625
5	99.6318	99.6029	99.5722	99.5394	99.5046	99.4676	99.4276	99.3849	99.3391	99.2897	99.2364	99.1782	99.1149	99.0465	98.9725
6	99.6383	99.6097	99.5794	99.5469	99.5124	99.4757	99.4360	99.3936	99.3480	99.2990	99.2459	99.1880	99.1250	99.0568	98.9829
7	99.6450	99.6167	99.5868	99.5546	99.5204	99.4841	99.4448	99.4026	99.3574	99.3086	99.2558	99.1982	99.1355	99.0676	98.9940
8	99.6518	99.6239	99.5943	99.5626	99.5288	99.4927	99.4538	99.4120	99.3671	99.3187	99.2662	99.2090	99.1465	99.0789	99.0056
9	99.6587	99.6312	99.6021	99.5707	99.5373	99.5017	99.4632	99.4218	99.3773	99.3292	99.2771	99.2202	99.1581	99.0908	99.0178
10	99.6657	99.6387	99.6100	99.5791	99.5461	99.5109	99.4728	99.4319	99.3878	99.3401	99.2884	99.2319	99.1702	99.1033	99.0306
11	99.6728	99.6462	99.6180	99.5876	99.5551	99.5204	99.4828	99.4423	99.3986	99.3514	99.3002	99.2441	99.1828	99.1163	99.0441
12	99.6799	99.6539	99.6261	99.5962	99.5643	99.5301	99.4930	99.4530	99.4099	99.3632	99.3124	99.2567	99.1959	99.1299	99.0581
13	99.6870	99.6615	99.6343	99.6050	99.5736	99.5400	99.5034	99.4640	99.4214	99.3752	99.3250	99.2699	99.2096	99.1440	99.0727
14	99.6941	99.6692	99.6426	99.6138	99.5830	99.5500	99.5140	99.4752	99.4332	99.3877	99.3380	99.2835	99.2237	99.1587	99.0880
15	99.7012	99.6768	99.6508	99.6227	99.5925	99.5602	99.5249	99.4867	99.4453	99.4004	99.3514	99.2975	99.2384	99.1740	99.1038
16	99.7082	99.6844	99.6591	99.6316	99.6021	99.5704	99.5358	99.4983	99.4577	99.4135	99.3651	99.3119	99.2535	99.1897	99.1203
17	99.7151	99.6920	99.6673	99.6405	99.6117	99.5807	99.5468	99.5101	99.4702	99.4268	99.3792	99.3267	99.2690	99.2060	99.1373
18	99.7219	99.6995	99.6754	99.6493	99.6213	99.5911	99.5580	99.5220	99.4829	99.4403	99.3935	99.3419	99.2850	99.2228	99.1548
19	99.7287	99.7068	99.6835	99.6581	99.6308	99.6014	99.5691	99.5340	99.4958	99.4540	99.4081	99.3573	99.3013	99.2400	99.1728
20	99.7352	99.7140	99.6914	99.6668	99.6402	99.6116	99.5802	99.5460	99.5087	99.4678	99.4228	99.3730	99.3179	99.2575	99.1914
21	99.7417	99.7211	99.6992	99.6753	99.6496	99.6218	99.5913	99.5580	99.5216	99.4817	99.4377	99.3889	99.3348	99.2755	99.2103
22	99.7480	99.7281	99.7068	99.6837	99.6588	99.6319	99.6022	99.5699	99.5345	99.4956	99.4527	99.4049	99.3520	99.2937	99.2296
23	99.7541	99.7349	99.7143	99.6920	99.6678	99.6418	99.6131	99.5817	99.5473	99.5095	99.4677	99.4211	99.3693	99.3122	99.2493
24	99.7601	99.7415	99.7217	99.7000	99.6767	99.6516	99.6238	99.5934	99.5601	99.5234	99.4827	99.4373	99.3866	99.3308	99.2692
25	99.7660	99.7480	99.7288	99.7079	99.6854	99.6612	99.6343	99.6049	99.5727	99.5371	99.4976	99.4534	99.4041	99.3496	99.2893
26	99.7717	99.7543	99.7358	99.7156	99.6939	99.6705	99.6446	99.6163	99.5851	99.5507	99.5124	99.4695	99.4215	99.3683	99.3095
27	99.7772	99.7604	99.7426	99.7231	99.7022	99.6797	99.6547	99.6274	99.5973	99.5641	99.5271	99.4855	99.4388	99.3871	99.3297
28	99.7826	99.7664	99.7492	99.7305	99.7103	99.6887	99.6646	99.6383	99.6093	99.5773	99.5415	99.5012	99.4560	99.4058	99.3499
29	99.7878	99.7721	99.7556	99.7376	99.7182	99.6974	99.6743	99.6489	99.6211	99.5902	99.5557	99.5168	99.4730	99.4243	99.3700
30	99.7928	99.7778	99.7618	99.7445	99.7259	99.7059	99.6837	99.6593	99.6325	99.6028	99.5696	99.5321	99.4898	99.4426	99.3900
31	99.7978	99.7832	99.7678	99.7512	99.7333	99.7141	99.6928	99.6695	99.6437	99.6152	99.5833	99.5471	99.5062	99.4607	99.4097
32	99.8025	99.7885	99.7737	99.7577	99.7405	99.7221	99.7017	99.6793	99.6546	99.6272	99.5966	99.5618	99.5224	99.4784	99.4292
33	99.8072	99.7936	99.7794	99.7640	99.7475	99.7299	99.7103	99.6889	99.6652	99.6390	99.6096	99.5761	99.5382	99.4958	99.4483
34	99.8117	99.7986	99.7849	99.7701	99.7543	99.7374	99.7187	99.6982	99.6755	99.6504	99.6222	99.5901	99.5537	99.5129	99.4670
35	99.8160	99.8035	99.7903	99.7761	99.7609	99.7448	99.7268	99.7072	99.6855	99.6615	99.6345	99.6037	99.5687	99.5295	99.4854

TEACHER RETIREMENT SYSTEM OF TEXAS

OPTION 2 FACTORS JOINT AND 50% BENEFICIARY WITH POP-UP FEATURE

Percentage is applied to the amount of single life service retirement benefit in order to obtain the optional benefit. Each percentage is based on age as of last birthday of member and beneficiary. Benefit reverts to single life amount if beneficiary predeceases member.

Age of beneficiary	Age of Member at Date of Retirement														
	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
36	99.8203	99.8082	99.7955	99.7818	99.7673	99.7519	99.7347	99.7159	99.6952	99.6723	99.6465	99.6170	99.5834	99.5457	99.5033
37	99.8244	99.8127	99.8006	99.7874	99.7735	99.7587	99.7423	99.7244	99.7047	99.6827	99.6580	99.6298	99.5977	99.5615	99.5208
38	99.8285	99.8172	99.8055	99.7929	99.7796	99.7654	99.7497	99.7326	99.7138	99.6928	99.6693	99.6423	99.6115	99.5769	99.5378
39	99.8324	99.8215	99.8102	99.7982	99.7854	99.7719	99.7569	99.7406	99.7226	99.7027	99.6802	99.6544	99.6249	99.5918	99.5543
40	99.8362	99.8257	99.8149	99.8033	99.7911	99.7781	99.7638	99.7483	99.7312	99.7122	99.6907	99.6661	99.6380	99.6062	99.5704
41	99.8399	99.8298	99.8194	99.8083	99.7966	99.7842	99.7706	99.7557	99.7395	99.7214	99.7010	99.6775	99.6506	99.6202	99.5859
42	99.8436	99.8338	99.8238	99.8131	99.8019	99.7901	99.7771	99.7630	99.7475	99.7303	99.7108	99.6885	99.6628	99.6338	99.6010
43	99.8471	99.8377	99.8281	99.8178	99.8071	99.7959	99.7834	99.7700	99.7553	99.7389	99.7204	99.6991	99.6746	99.6469	99.6156
44	99.8506	99.8415	99.8323	99.8224	99.8122	99.8014	99.7896	99.7768	99.7628	99.7472	99.7297	99.7094	99.6860	99.6596	99.6297
45	99.8540	99.8453	99.8363	99.8269	99.8171	99.8069	99.7956	99.7834	99.7701	99.7553	99.7387	99.7193	99.6971	99.6719	99.6434
46	99.8574	99.8489	99.8403	99.8313	99.8219	99.8121	99.8014	99.7898	99.7772	99.7632	99.7473	99.7290	99.7078	99.6838	99.6566
47	99.8607	99.8525	99.8442	99.8355	99.8265	99.8173	99.8070	99.7960	99.7840	99.7707	99.7557	99.7383	99.7181	99.6953	99.6693
48	99.8639	99.8560	99.8481	99.8397	99.8311	99.8223	99.8125	99.8021	99.7907	99.7781	99.7639	99.7473	99.7281	99.7064	99.6817
49	99.8671	99.8594	99.8518	99.8438	99.8356	99.8271	99.8179	99.8079	99.7972	99.7853	99.7718	99.7560	99.7378	99.7171	99.6936
50	99.8702	99.8628	99.8555	99.8478	99.8399	99.8319	99.8231	99.8137	99.8035	99.7922	99.7794	99.7645	99.7472	99.7275	99.7051
51	99.8732	99.8661	99.8590	99.8517	99.8442	99.8365	99.8281	99.8192	99.8096	99.7989	99.7869	99.7727	99.7562	99.7376	99.7163
52	99.8762	99.8694	99.8626	99.8555	99.8483	99.8411	99.8331	99.8247	99.8155	99.8055	99.7941	99.7806	99.7650	99.7473	99.7270
53	99.8792	99.8726	99.8660	99.8592	99.8524	99.8455	99.8379	99.8299	99.8213	99.8118	99.8011	99.7884	99.7735	99.7567	99.7375
54	99.8821	99.8758	99.8694	99.8629	99.8564	99.8498	99.8427	99.8351	99.8270	99.8180	99.8079	99.7958	99.7818	99.7658	99.7475
55	99.8850	99.8789	99.8728	99.8665	99.8603	99.8541	99.8473	99.8401	99.8325	99.8240	99.8145	99.8031	99.7898	99.7746	99.7573
56	99.8879	99.8819	99.8761	99.8701	99.8641	99.8582	99.8518	99.8451	99.8378	99.8299	99.8209	99.8102	99.7976	99.7832	99.7668
57	99.8907	99.8850	99.8793	99.8736	99.8679	99.8623	99.8562	99.8499	99.8431	99.8356	99.8272	99.8171	99.8051	99.7915	99.7759
58	99.8935	99.8879	99.8825	99.8770	99.8716	99.8663	99.8605	99.8546	99.8482	99.8412	99.8333	99.8238	99.8125	99.7996	99.7848
59	99.8963	99.8909	99.8857	99.8804	99.8752	99.8702	99.8648	99.8591	99.8532	99.8466	99.8392	99.8303	99.8196	99.8075	99.7935
60	99.8990	99.8938	99.8888	99.8837	99.8788	99.8741	99.8689	99.8636	99.8580	99.8519	99.8450	99.8366	99.8266	99.8151	99.8018
61	99.9018	99.8967	99.8918	99.8870	99.8823	99.8778	99.8730	99.8680	99.8628	99.8571	99.8506	99.8427	99.8333	99.8225	99.8100
62	99.9045	99.8996	99.8949	99.8902	99.8858	99.8815	99.8769	99.8723	99.8674	99.8621	99.8561	99.8487	99.8398	99.8296	99.8178
63	99.9072	99.9024	99.8979	99.8934	99.8891	99.8851	99.8808	99.8765	99.8720	99.8671	99.8615	99.8545	99.8462	99.8366	99.8255
64	99.9098	99.9052	99.9009	99.8966	99.8925	99.8887	99.8846	99.8806	99.8764	99.8718	99.8666	99.8602	99.8524	99.8433	99.8329
65	99.9125	99.9080	99.9038	99.8997	99.8958	99.8922	99.8884	99.8846	99.8807	99.8765	99.8717	99.8657	99.8584	99.8499	99.8401
66	99.9152	99.9108	99.9067	99.9027	99.8990	99.8956	99.8920	99.8885	99.8849	99.8810	99.8766	99.8710	99.8642	99.8562	99.8470
67	99.9178	99.9136	99.9096	99.9058	99.9022	99.8990	99.8956	99.8923	99.8890	99.8854	99.8814	99.8762	99.8698	99.8624	99.8537
68	99.9205	99.9164	99.9125	99.9088	99.9054	99.9024	99.8992	99.8961	99.8930	99.8897	99.8860	99.8812	99.8753	99.8683	99.8602
69	99.9231	99.9191	99.9154	99.9118	99.9085	99.9057	99.9026	99.8998	99.8969	99.8939	99.8905	99.8861	99.8806	99.8741	99.8665
70	99.9258	99.9219	99.9182	99.9148	99.9116	99.9089	99.9061	99.9034	99.9008	99.8980	99.8949	99.8909	99.8857	99.8797	99.8726

TEACHER RETIREMENT SYSTEM OF TEXAS

**OPTION 2 FACTORS
JOINT AND 50% BENEFICIARY WITH POP-UP FEATURE**

Percentage is applied to the amount of single life service retirement benefit in order to obtain the optional benefit. Each percentage is based on age as of last birthday of member and beneficiary. Benefit reverts to single life amount if beneficiary predeceases member.

Age of beneficiary	Age of Member at Date of Retirement														
	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
71	99.9284	99.9246	99.9211	99.9177	99.9147	99.9121	99.9094	99.9069	99.9045	99.9020	99.8992	99.8955	99.8907	99.8851	99.8785
72	99.9310	99.9273	99.9239	99.9207	99.9178	99.9153	99.9128	99.9104	99.9082	99.9060	99.9034	99.9000	99.8955	99.8903	99.8842
73	99.9337	99.9300	99.9267	99.9236	99.9208	99.9184	99.9160	99.9139	99.9119	99.9098	99.9075	99.9043	99.9002	99.8954	99.8897
74	99.9363	99.9328	99.9295	99.9265	99.9238	99.9216	99.9193	99.9173	99.9154	99.9135	99.9115	99.9086	99.9048	99.9003	99.8950
75	99.9389	99.9355	99.9323	99.9294	99.9268	99.9246	99.9225	99.9206	99.9189	99.9172	99.9154	99.9127	99.9092	99.9051	99.9002
76	99.9415	99.9382	99.9351	99.9322	99.9297	99.9277	99.9257	99.9239	99.9223	99.9208	99.9192	99.9167	99.9135	99.9097	99.9051
77	99.9441	99.9409	99.9378	99.9351	99.9327	99.9307	99.9288	99.9271	99.9257	99.9243	99.9229	99.9207	99.9177	99.9142	99.9099
78	99.9467	99.9435	99.9406	99.9379	99.9356	99.9337	99.9319	99.9303	99.9290	99.9278	99.9265	99.9245	99.9218	99.9185	99.9146
79	99.9493	99.9462	99.9433	99.9407	99.9385	99.9367	99.9349	99.9335	99.9323	99.9312	99.9301	99.9282	99.9257	99.9227	99.9191
80	99.9518	99.9488	99.9460	99.9435	99.9413	99.9396	99.9380	99.9366	99.9355	99.9345	99.9335	99.9319	99.9296	99.9268	99.9235
81	99.9543	99.9514	99.9487	99.9463	99.9442	99.9425	99.9409	99.9397	99.9387	99.9378	99.9370	99.9355	99.9334	99.9308	99.9277
82	99.9568	99.9540	99.9514	99.9490	99.9470	99.9454	99.9439	99.9427	99.9418	99.9410	99.9403	99.9390	99.9370	99.9346	99.9318
83	99.9593	99.9566	99.9540	99.9517	99.9498	99.9482	99.9468	99.9456	99.9448	99.9442	99.9436	99.9424	99.9406	99.9384	99.9357
84	99.9617	99.9591	99.9566	99.9544	99.9525	99.9510	99.9496	99.9486	99.9478	99.9473	99.9467	99.9457	99.9441	99.9420	99.9396
85	99.9641	99.9615	99.9592	99.9570	99.9552	99.9538	99.9524	99.9514	99.9507	99.9503	99.9499	99.9489	99.9474	99.9456	99.9433
86	99.9664	99.9640	99.9617	99.9596	99.9578	99.9565	99.9552	99.9542	99.9536	99.9532	99.9529	99.9521	99.9507	99.9490	99.9469
87	99.9687	99.9664	99.9642	99.9622	99.9604	99.9591	99.9579	99.9570	99.9564	99.9561	99.9559	99.9551	99.9539	99.9524	99.9504
88	99.9709	99.9687	99.9666	99.9647	99.9630	99.9617	99.9606	99.9597	99.9592	99.9589	99.9587	99.9581	99.9570	99.9556	99.9538
89	99.9731	99.9709	99.9689	99.9671	99.9655	99.9643	99.9631	99.9623	99.9618	99.9616	99.9615	99.9610	99.9600	99.9587	99.9571
90	99.9751	99.9731	99.9712	99.9695	99.9679	99.9668	99.9657	99.9649	99.9644	99.9643	99.9642	99.9638	99.9629	99.9617	99.9602
91	99.9771	99.9752	99.9734	99.9718	99.9703	99.9692	99.9681	99.9674	99.9670	99.9668	99.9668	99.9665	99.9657	99.9646	99.9633
92	99.9791	99.9773	99.9756	99.9740	99.9726	99.9715	99.9705	99.9698	99.9694	99.9693	99.9694	99.9691	99.9684	99.9674	99.9662
93	99.9809	99.9792	99.9776	99.9761	99.9748	99.9738	99.9728	99.9721	99.9718	99.9717	99.9718	99.9716	99.9709	99.9701	99.9690
94	99.9826	99.9811	99.9796	99.9782	99.9769	99.9760	99.9751	99.9744	99.9740	99.9740	99.9741	99.9739	99.9734	99.9726	99.9716
95	99.9842	99.9828	99.9814	99.9801	99.9790	99.9781	99.9772	99.9765	99.9762	99.9761	99.9763	99.9762	99.9757	99.9750	99.9741
96	99.9857	99.9844	99.9831	99.9819	99.9808	99.9800	99.9792	99.9786	99.9782	99.9781	99.9783	99.9782	99.9778	99.9772	99.9764
97	99.9870	99.9858	99.9846	99.9835	99.9825	99.9818	99.9810	99.9804	99.9800	99.9800	99.9802	99.9801	99.9798	99.9792	99.9785
98	99.9881	99.9870	99.9859	99.9849	99.9840	99.9833	99.9825	99.9820	99.9816	99.9816	99.9818	99.9817	99.9814	99.9809	99.9803
99	99.9890	99.9879	99.9869	99.9860	99.9851	99.9844	99.9837	99.9832	99.9829	99.9828	99.9830	99.9830	99.9827	99.9823	99.9816
100	99.9895	99.9885	99.9875	99.9866	99.9858	99.9851	99.9845	99.9840	99.9837	99.9836	99.9838	99.9838	99.9835	99.9831	99.9825

TEACHER RETIREMENT SYSTEM OF TEXAS

OPTION 2 FACTORS JOINT AND 50% BENEFICIARY WITH POP-UP FEATURE

Percentage is applied to the amount of single life service retirement benefit in order to obtain the optional benefit. Each percentage is based on age as of last birthday of member and beneficiary. Benefit reverts to single life amount if beneficiary predeceases member.

Age of beneficiary	Age of Member at Date of Retirement														
	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
71	97.6859	97.4053	97.0816	96.7198	96.3161	95.8662	95.3658	94.8101	94.1944	93.5134	92.7622	91.9354	91.0278	90.0340	88.9491
72	97.8260	97.5616	97.2558	96.9134	96.5310	96.1042	95.6287	95.0998	94.5127	93.8622	93.1431	92.3499	91.4772	90.5194	89.4713
73	97.9603	97.7116	97.4232	97.0999	96.7384	96.3343	95.8836	95.3814	94.8229	94.2030	93.5164	92.7575	91.9208	91.0003	89.9906
74	98.0887	97.8554	97.5838	97.2791	96.9380	96.5563	96.1299	95.6542	95.1243	94.5351	93.8812	93.1571	92.3570	91.4748	90.5049
75	98.2115	97.9929	97.7376	97.4510	97.1298	96.7700	96.3675	95.9178	95.4162	94.8575	94.2365	93.5474	92.7845	91.9415	91.0125
76	98.3285	98.1241	97.8847	97.6156	97.3137	96.9751	96.5961	96.1720	95.6983	95.1698	94.5815	93.9275	93.2020	92.3986	91.5115
77	98.4400	98.2493	98.0251	97.7728	97.4897	97.1718	96.8155	96.4164	95.9701	95.4714	94.9154	94.2963	93.6083	92.8450	92.0002
78	98.5461	98.3684	98.1588	97.9229	97.6578	97.3599	97.0257	96.6509	96.2313	95.7619	95.2378	94.6533	94.0025	93.2793	92.4772
79	98.6468	98.4817	98.2861	98.0657	97.8180	97.5394	97.2266	96.8755	96.4819	96.0411	95.5482	94.9977	94.3839	93.7005	92.9412
80	98.7424	98.5892	98.4070	98.2016	97.9706	97.7106	97.4184	97.0900	96.7217	96.3086	95.8463	95.3292	94.7518	94.1078	93.3910
81	98.8330	98.6912	98.5218	98.3307	98.1156	97.8734	97.6010	97.2947	96.9507	96.5646	96.1319	95.6474	95.1056	94.5004	93.8258
82	98.9187	98.7877	98.6305	98.4531	98.2533	98.0281	97.7747	97.4895	97.1690	96.8089	96.4049	95.9521	95.4450	94.8779	94.2447
83	98.9997	98.8790	98.7334	98.5689	98.3837	98.1748	97.9395	97.6746	97.3766	97.0416	96.6653	96.2431	95.7699	95.2399	94.6473
84	99.0762	98.9653	98.8306	98.6785	98.5071	98.3137	98.0958	97.8502	97.5738	97.2628	96.9132	96.5206	96.0800	95.5860	95.0330
85	99.1483	99.0466	98.9223	98.7819	98.6237	98.4450	98.2436	98.0164	97.7607	97.4727	97.1487	96.7845	96.3754	95.9162	95.4016
86	99.2163	99.1232	99.0088	98.8795	98.7336	98.5689	98.3832	98.1736	97.9375	97.6714	97.3719	97.0349	96.6561	96.2305	95.7529
87	99.2801	99.1953	99.0902	98.9713	98.8372	98.6857	98.5148	98.3219	98.1044	97.8592	97.5830	97.2721	96.9222	96.5287	96.0868
88	99.3402	99.2630	99.1666	99.0576	98.9347	98.7956	98.6388	98.4616	98.2618	98.0364	97.7824	97.4962	97.1740	96.8113	96.4036
89	99.3965	99.3265	99.2384	99.1387	99.0261	98.8989	98.7552	98.5930	98.4099	98.2032	97.9703	97.7076	97.4116	97.0783	96.7032
90	99.4492	99.3860	99.3056	99.2146	99.1119	98.9957	98.8645	98.7163	98.5490	98.3600	98.1469	97.9065	97.6355	97.3300	96.9860
91	99.4985	99.4416	99.3684	99.2856	99.1921	99.0863	98.9668	98.8317	98.6792	98.5070	98.3126	98.0932	97.8457	97.5666	97.2522
92	99.5445	99.4935	99.4270	99.3518	99.2669	99.1708	99.0623	98.9395	98.8010	98.6443	98.4675	98.2679	98.0427	97.7885	97.5019
93	99.5872	99.5416	99.4815	99.4133	99.3365	99.2494	99.1511	99.0399	98.9142	98.7722	98.6119	98.4308	98.2263	97.9955	97.7352
94	99.6267	99.5861	99.5318	99.4702	99.4008	99.3221	99.2332	99.1327	99.0191	98.8907	98.7456	98.5818	98.3967	98.1877	97.9518
95	99.6629	99.6269	99.5779	99.5224	99.4597	99.3887	99.3086	99.2178	99.1153	98.9994	98.8684	98.7204	98.5533	98.3644	98.1512
96	99.6956	99.6636	99.6194	99.5694	99.5129	99.4489	99.3766	99.2947	99.2022	99.0976	98.9794	98.8458	98.6949	98.5243	98.3318
97	99.7243	99.6959	99.6559	99.6107	99.5596	99.5017	99.4363	99.3623	99.2786	99.1840	99.0770	98.9562	98.8196	98.6652	98.4909
98	99.7484	99.7228	99.6864	99.6451	99.5986	99.5458	99.4862	99.4187	99.3424	99.2562	99.1587	99.0485	98.9239	98.7831	98.6241
99	99.7665	99.7431	99.7093	99.6711	99.6279	99.5790	99.5237	99.4612	99.3905	99.3105	99.2201	99.1180	99.0025	98.8720	98.7246
100	99.7776	99.7553	99.7232	99.6867	99.6456	99.5991	99.5464	99.4868	99.4195	99.3434	99.2573	99.1600	99.0501	98.9258	98.7855

TEACHER RETIREMENT SYSTEM OF TEXAS

**OPTION 2 FACTORS
JOINT AND 50% BENEFICIARY WITH POP-UP FEATURE**

Percentage is applied to the amount of single life service retirement benefit in order to obtain the optional benefit. Each percentage is based on age as of last birthday of member and beneficiary. Benefit reverts to single life amount if beneficiary predeceases member.

Age of beneficiary	Age of Member at Date of Retirement														
	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89
71	87.7680	86.4862	85.0991	83.6031	81.9947	80.2710	78.4299	76.4702	74.3912	72.1935	69.8786	67.4493	64.9123	62.2765	59.5470
72	88.3276	87.0832	85.7333	84.2739	82.7012	81.0116	79.2028	77.2732	75.2216	73.0482	70.7542	68.3420	65.8177	63.1903	60.4645
73	88.8861	87.6814	86.3713	84.9513	83.4172	81.7651	79.9921	78.0961	76.0756	73.9302	71.6607	69.2690	66.7610	64.1451	61.4258
74	89.4414	88.2784	87.0106	85.6327	84.1404	82.5291	80.7954	78.9367	76.9511	74.8376	72.5966	70.2293	67.7412	65.1404	62.4309
75	89.9914	88.8721	87.6486	86.3156	84.8679	83.3007	81.6099	79.7925	77.8458	75.7684	73.5600	71.2213	68.7573	66.1756	63.4796
76	90.5340	89.4599	88.2829	86.9971	85.5970	84.0771	82.4328	80.6605	78.7569	76.7200	74.5486	72.2431	69.8077	67.2495	64.5713
77	91.0673	90.0398	88.9110	87.6747	86.3247	84.8552	83.2609	81.5376	79.6813	77.6893	75.5598	73.2923	70.8905	68.3605	65.7049
78	91.5896	90.6097	89.5305	88.3455	87.0481	85.6318	84.0909	82.4204	80.6156	78.6732	76.5904	74.3661	72.0029	69.5066	66.8787
79	92.0992	91.1675	90.1391	89.0070	87.7642	86.4038	84.9194	83.3053	81.5563	79.6679	77.6369	75.4610	73.1421	70.6851	68.0906
80	92.5947	91.7117	90.7348	89.6567	88.4703	87.1680	85.7429	84.1887	82.4993	80.6696	78.6953	76.5733	74.3045	71.8928	69.3378
81	93.0749	92.2406	91.3156	90.2925	89.1637	87.9213	86.5580	85.0668	83.4408	81.6741	79.7615	77.6988	75.4860	73.1259	70.6171
82	93.5388	92.7530	91.8800	90.9122	89.8419	88.6610	87.3615	85.9359	84.3767	82.6771	80.8309	78.8330	76.6822	74.3801	71.9243
83	93.9855	93.2477	92.4264	91.5140	90.5028	89.3842	88.1501	86.7924	85.3029	83.6741	81.8989	79.9709	77.8880	75.6506	73.2548
84	94.4145	93.7238	92.9537	92.0965	91.1443	90.0886	88.9210	87.6329	86.2155	84.6608	82.9605	81.1075	79.0983	76.9320	74.6035
85	94.8252	94.1807	93.4608	92.6581	91.7647	90.7721	89.6715	88.4541	87.1108	85.6328	84.0111	82.2374	80.3073	78.2185	75.9644
86	95.2174	94.6178	93.9470	93.1979	92.3626	91.4326	90.3991	89.2531	87.9852	86.5859	85.0457	83.3554	81.5092	79.5038	77.3311
87	95.5908	95.0347	94.4118	93.7150	92.9367	92.0686	91.1018	90.0273	88.8354	87.5164	86.0599	84.4562	82.6983	80.7818	78.6970
88	95.9455	95.4313	94.8546	94.2087	93.4862	92.6788	91.7779	90.7746	89.6588	88.4207	87.0497	85.5350	83.8690	82.0461	80.0554
89	96.2815	95.8076	95.2755	94.6788	94.0104	93.2623	92.4261	91.4929	90.4529	89.2959	88.0111	86.5873	85.0161	83.2909	81.3996
90	96.5990	96.1636	95.6744	95.1250	94.5089	93.8183	93.0452	92.1809	91.2156	90.1393	88.9409	87.6089	86.1345	84.5101	82.7227
91	96.8981	96.4995	96.0511	95.5471	94.9812	94.3462	93.6343	92.8370	91.9450	90.9483	89.8358	88.5959	87.2193	85.6980	84.0181
92	97.1790	96.8152	96.4057	95.9450	95.4271	94.8454	94.1924	93.4601	92.6394	91.7206	90.6928	89.5443	88.2657	86.8487	85.2787
93	97.4416	97.1107	96.7379	96.3182	95.8461	95.3152	94.7185	94.0486	93.2968	92.4536	91.5087	90.4502	89.2689	87.9563	86.4974
94	97.6857	97.3857	97.0474	96.6662	96.2372	95.7543	95.2112	94.6007	93.9147	93.1444	92.2795	91.3088	90.2229	89.0136	87.6659
95	97.9106	97.6391	97.3328	96.9877	96.5988	96.1609	95.6680	95.1135	94.4898	93.7887	93.0003	92.1139	91.1204	90.0119	88.7734
96	98.1143	97.8689	97.5920	97.2798	96.9279	96.5313	96.0847	95.5820	95.0161	94.3794	93.6628	92.8558	91.9500	90.9378	89.8047
97	98.2940	98.0718	97.8209	97.5380	97.2190	96.8594	96.4543	95.9981	95.4843	94.9060	94.2545	93.5202	92.6950	91.7719	90.7371
98	98.4446	98.2418	98.0130	97.7548	97.4637	97.1356	96.7657	96.3491	95.8799	95.3516	94.7564	94.0850	93.3300	92.4850	91.5370
99	98.5582	98.3703	98.1582	97.9188	97.6490	97.3448	97.0019	96.6157	96.1808	95.6911	95.1393	94.5169	93.8168	93.0333	92.1540
100	98.6270	98.4481	98.2461	98.0182	97.7614	97.4718	97.1454	96.7778	96.3639	95.8979	95.3729	94.7807	94.1147	93.3694	92.5332

TEACHER RETIREMENT SYSTEM OF TEXAS

**OPTION 2 FACTORS
JOINT AND 50% BENEFICIARY WITH POP-UP FEATURE**

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Age of beneficiary	Age of Member at Date of Retirement										
	90	91	92	93	94	95	96	97	98	99	100
1	42.4685	39.9598	37.4518	34.9529	32.4803	30.0436	27.6640	25.3765	23.2214	21.2789	19.6955
2	42.4757	39.9665	37.4580	34.9586	32.4856	30.0484	27.6682	25.3803	23.2248	21.2819	19.6982
3	42.4847	39.9750	37.4659	34.9660	32.4924	30.0547	27.6740	25.3857	23.2296	21.2863	19.7022
4	42.4948	39.9846	37.4750	34.9746	32.5005	30.0622	27.6809	25.3920	23.2354	21.2916	19.7072
5	42.5063	39.9955	37.4854	34.9844	32.5096	30.0707	27.6888	25.3993	23.2422	21.2978	19.7130
6	42.5189	40.0076	37.4968	34.9952	32.5198	30.0802	27.6977	25.4075	23.2497	21.3048	19.7195
7	42.5326	40.0207	37.5094	35.0071	32.5310	30.0907	27.7075	25.4166	23.2581	21.3125	19.7267
8	42.5474	40.0350	37.5230	35.0201	32.5433	30.1023	27.7183	25.4266	23.2674	21.3211	19.7347
9	42.5634	40.0504	37.5378	35.0341	32.5566	30.1148	27.7300	25.4375	23.2775	21.3305	19.7434
10	42.5804	40.0667	37.5535	35.0491	32.5708	30.1283	27.7427	25.4493	23.2885	21.3407	19.7530
11	42.5983	40.0841	37.5701	35.0650	32.5860	30.1426	27.7561	25.4619	23.3002	21.3516	19.7632
12	42.6171	40.1021	37.5875	35.0816	32.6018	30.1575	27.7702	25.4751	23.3125	21.3631	19.7739
13	42.6366	40.1209	37.6055	35.0989	32.6182	30.1731	27.7848	25.4888	23.3252	21.3749	19.7850
14	42.6570	40.1406	37.6244	35.1169	32.6353	30.1893	27.8000	25.5030	23.3385	21.3873	19.7966
15	42.6784	40.1613	37.6443	35.1359	32.6533	30.2063	27.8160	25.5180	23.3525	21.4003	19.8088
16	42.7009	40.1829	37.6650	35.1556	32.6721	30.2240	27.8327	25.5336	23.3670	21.4138	19.8214
17	42.7245	40.2057	37.6868	35.1764	32.6918	30.2427	27.8502	25.5499	23.3822	21.4279	19.8347
18	42.7494	40.2295	37.7096	35.1982	32.7125	30.2621	27.8685	25.5670	23.3981	21.4427	19.8486
19	42.7759	40.2549	37.7338	35.2212	32.7343	30.2827	27.8878	25.5850	23.4149	21.4583	19.8632
20	42.8039	40.2818	37.7595	35.2456	32.7573	30.3044	27.9081	25.6040	23.4325	21.4747	19.8785
21	42.8339	40.3104	37.7868	35.2715	32.7818	30.3274	27.9296	25.6240	23.4511	21.4920	19.8947
22	42.8660	40.3411	37.8160	35.2992	32.8080	30.3520	27.9526	25.6454	23.4709	21.5104	19.9118
23	42.9006	40.3742	37.8475	35.3290	32.8361	30.3783	27.9772	25.6683	23.4921	21.5300	19.9302
24	42.9380	40.4100	37.8815	35.3613	32.8665	30.4068	28.0038	25.6930	23.5149	21.5511	19.9499
25	42.9786	40.4488	37.9185	35.3963	32.8995	30.4379	28.0327	25.7199	23.5399	21.5742	19.9714
26	43.0225	40.4908	37.9586	35.4343	32.9354	30.4716	28.0642	25.7491	23.5670	21.5993	19.9949
27	43.0699	40.5362	38.0019	35.4754	32.9742	30.5080	28.0983	25.7808	23.5963	21.6266	20.0203
28	43.1212	40.5853	38.0487	35.5199	33.0162	30.5475	28.1352	25.8152	23.6282	21.6561	20.0479
29	43.1763	40.6381	38.0990	35.5677	33.0614	30.5899	28.1749	25.8521	23.6625	21.6879	20.0776
30	43.2356	40.6950	38.1533	35.6191	33.1100	30.6357	28.2177	25.8920	23.6994	21.7222	20.1097
31	43.2995	40.7562	38.2117	35.6746	33.1624	30.6850	28.2638	25.9349	23.7393	21.7591	20.1442
32	43.3682	40.8220	38.2745	35.7343	33.2188	30.7380	28.3133	25.9811	23.7821	21.7988	20.1813
33	43.4421	40.8929	38.3421	35.7985	33.2795	30.7951	28.3668	26.0308	23.8282	21.8417	20.2214
34	43.5216	40.9690	38.4148	35.8676	33.3449	30.8565	28.4242	26.0843	23.8779	21.8877	20.2644
35	43.6071	41.0511	38.4932	35.9420	33.4152	30.9227	28.4862	26.1420	23.9314	21.9374	20.3108

TEACHER RETIREMENT SYSTEM OF TEXAS

**OPTION 2 FACTORS
JOINT AND 50% BENEFICIARY WITH POP-UP FEATURE**

Percentage is applied to the amount of single life service retirement benefit in order to obtain the optional benefit. Each percentage is based on age as of last birthday of member and beneficiary. Benefit reverts to single life amount if beneficiary predeceases member.

Age of beneficiary	Age of Member at Date of Retirement										
	90	91	92	93	94	95	96	97	98	99	100
36	43.6992	41.1395	38.5776	36.0223	33.4911	30.9941	28.5530	26.2042	23.9892	21.9910	20.3610
37	43.7982	41.2344	38.6683	36.1086	33.5728	31.0710	28.6250	26.2713	24.0514	22.0487	20.4150
38	43.9046	41.3366	38.7660	36.2015	33.6608	31.1538	28.7026	26.3436	24.1186	22.1111	20.4732
39	44.0187	41.4462	38.8708	36.3013	33.7553	31.2428	28.7859	26.4213	24.1908	22.1781	20.5360
40	44.1411	41.5639	38.9834	36.4085	33.8569	31.3386	28.8757	26.5050	24.2686	22.2503	20.6035
41	44.2722	41.6900	39.1041	36.5235	33.9659	31.4413	28.9720	26.5949	24.3521	22.3280	20.6762
42	44.4125	41.8250	39.2334	36.6467	34.0827	31.5516	29.0754	26.6915	24.4419	22.4114	20.7542
43	44.5626	41.9695	39.3719	36.7787	34.2079	31.6697	29.1863	26.7949	24.5381	22.5008	20.8380
44	44.7230	42.1239	39.5199	36.9199	34.3419	31.7962	29.3050	26.9059	24.6413	22.5968	20.9278
45	44.8943	42.2889	39.6782	37.0710	34.4853	31.9316	29.4321	27.0246	24.7519	22.6996	21.0241
46	45.0770	42.4651	39.8472	37.2323	34.6386	32.0763	29.5681	27.1518	24.8702	22.8097	21.1272
47	45.2720	42.6531	40.0277	37.4048	34.8025	32.2312	29.7137	27.2879	24.9969	22.9276	21.2376
48	45.4799	42.8537	40.2204	37.5889	34.9775	32.3967	29.8693	27.4334	25.1325	23.0538	21.3559
49	45.7016	43.0676	40.4259	37.7854	35.1645	32.5736	30.0357	27.5891	25.2776	23.1889	21.4825
50	45.9376	43.2956	40.6450	37.9950	35.3640	32.7624	30.2134	27.7555	25.4328	23.3334	21.6180
51	46.1892	43.5385	40.8786	38.2185	35.5768	32.9639	30.4031	27.9333	25.5986	23.4880	21.7630
52	46.4570	43.7972	41.1274	38.4566	35.8034	33.1785	30.6053	28.1227	25.7754	23.6528	21.9176
53	46.7423	44.0729	41.3924	38.7102	36.0449	33.4072	30.8206	28.3245	25.9637	23.8284	22.0824
54	47.0469	44.3671	41.6754	38.9810	36.3028	33.6514	31.0506	28.5400	26.1649	24.0159	22.2583
55	47.3724	44.6818	41.9781	39.2708	36.5788	33.9128	31.2969	28.7707	26.3802	24.2166	22.4467
56	47.7207	45.0188	42.3026	39.5816	36.8748	34.1933	31.5611	29.0184	26.6113	24.4322	22.6489
57	48.0938	45.3800	42.6507	39.9152	37.1929	34.4948	31.8452	29.2847	26.8600	24.6641	22.8666
58	48.4936	45.7675	43.0244	40.2738	37.5350	34.8194	32.1513	29.5719	27.1282	24.9142	23.1014
59	48.9217	46.1830	43.4256	40.6592	37.9032	35.1690	32.4813	29.8817	27.4177	25.1845	23.3552
60	49.3797	46.6282	43.8562	41.0733	38.2993	35.5456	32.8373	30.2163	27.7307	25.4768	23.6299
61	49.8688	47.1043	44.3172	41.5175	38.7248	35.9508	33.2208	30.5771	28.0687	25.7929	23.9271
62	50.3897	47.6120	44.8096	41.9924	39.1803	36.3851	33.6323	30.9649	28.4324	26.1333	24.2474
63	50.9433	48.1523	45.3343	42.4991	39.6668	36.8494	34.0728	31.3804	28.8223	26.4986	24.5914
64	51.5311	48.7269	45.8930	43.0393	40.1862	37.3457	34.5441	31.8254	29.2403	26.8905	24.9606
65	52.1548	49.3375	46.4876	43.6150	40.7405	37.8761	35.0483	32.3019	29.6885	27.3110	25.3571
66	52.8161	49.9859	47.1199	44.2282	41.3317	38.4425	35.5876	32.8122	30.1688	27.7621	25.7828
67	53.5164	50.6737	47.7919	44.8810	41.9619	39.0472	36.1641	33.3584	30.6836	28.2461	26.2397
68	54.2572	51.4027	48.5054	45.5752	42.6333	39.6925	36.7801	33.9429	31.2352	28.7651	26.7302
69	55.0400	52.1746	49.2623	46.3130	43.3482	40.3806	37.4382	34.5682	31.8261	29.3218	27.2567
70	55.8662	52.9910	50.0645	47.0966	44.1088	41.1141	38.1408	35.2369	32.4588	29.9188	27.8219

TEACHER RETIREMENT SYSTEM OF TEXAS

OPTION 2 FACTORS JOINT AND 50% BENEFICIARY WITH POP-UP FEATURE

Percentage is applied to the amount of single life service retirement benefit in order to obtain the optional benefit. Each percentage is based on age as of last birthday of member and beneficiary. Benefit reverts to single life amount if beneficiary predeceases member.

Age of beneficiary	Age of Member at Date of Retirement										
	90	91	92	93	94	95	96	97	98	99	100
71	56.7368	53.8534	50.9137	47.9278	44.9174	41.8954	38.8905	35.9517	33.1363	30.5587	28.4283
72	57.6530	54.7630	51.8117	48.8088	45.7762	42.7270	39.6902	36.7155	33.8614	31.2446	29.0790
73	58.6155	55.7212	52.7599	49.7414	46.6875	43.6113	40.5424	37.5311	34.6370	31.9795	29.7771
74	59.6248	56.7289	53.7598	50.7274	47.6534	44.5510	41.4499	38.4015	35.4665	32.7667	30.5258
75	60.6812	57.7867	54.8126	51.7684	48.6760	45.5483	42.4156	39.3298	36.3530	33.6096	31.3285
76	61.7845	58.8951	55.9192	52.8659	49.7571	46.6057	43.4421	40.3190	37.2998	34.5116	32.1889
77	62.9342	60.0540	57.0800	54.0209	50.8984	47.7254	44.5322	41.3724	38.3104	35.4764	33.1106
78	64.1292	61.2630	58.2952	55.2343	52.1014	48.9093	45.6883	42.4927	39.3882	36.5076	34.0976
79	65.3679	62.5210	59.5646	56.5063	53.3671	50.1591	46.9128	43.6831	40.5366	37.6092	35.1538
80	66.6481	63.8266	60.8872	57.8369	54.6961	51.4764	48.2080	44.9462	41.7589	38.7848	36.2834
81	67.9669	65.1774	62.2615	59.2253	56.0885	52.8619	49.5754	46.2847	43.0584	40.0382	37.4904
82	69.3208	66.5705	63.6854	60.6701	57.5438	54.3162	51.0166	47.7008	44.4382	41.3732	38.7791
83	70.7055	68.0023	65.1556	62.1691	59.0606	55.8388	52.5321	49.1962	45.9008	42.7931	40.1533
84	72.1162	69.4681	66.6684	63.7192	60.6369	57.4288	54.1221	50.7721	47.4487	44.3012	41.6171
85	73.5469	70.9626	68.2189	65.3162	62.2693	59.0838	55.7854	52.4287	49.0831	45.9001	43.1738
86	74.9915	72.4796	69.8012	66.9548	63.9534	60.8004	57.5199	54.1650	50.8045	47.5913	44.8258
87	76.4428	74.0121	71.4087	68.6289	65.6837	62.5742	59.3222	55.9790	52.6121	49.3753	46.5749
88	77.8940	75.5530	73.0342	70.3317	67.4541	64.4000	61.1883	57.8680	54.5049	51.2526	48.4226
89	79.3378	77.0948	74.6702	72.0559	69.2579	66.2718	63.1133	59.8288	56.4810	53.2230	50.3701
90	80.7666	78.6292	76.3082	73.7930	71.0867	68.1819	65.0908	61.8560	58.5370	55.2846	52.4171
91	82.1727	80.1478	77.9391	75.5335	72.9314	70.1219	67.1131	63.9436	60.6684	57.4350	54.5627
92	83.5481	81.6413	79.5527	77.2667	74.7810	72.0809	69.1702	66.0828	62.8682	59.6690	56.8038
93	84.8842	83.1001	81.1381	78.9806	76.6227	74.0461	71.2500	68.2627	65.1273	61.9799	59.1357
94	86.1711	84.5125	82.6818	80.6601	78.4403	76.0006	73.3356	70.4672	67.4313	64.3555	61.5486
95	87.3965	85.8641	84.1674	82.2865	80.2127	77.9216	75.4031	72.6730	69.7584	66.7764	64.0260
96	88.5424	87.1340	85.5707	83.8322	81.9088	79.7743	77.4149	74.8404	72.0690	69.2046	66.5324
97	89.5827	88.2922	86.8572	85.2575	83.4833	81.5075	79.3139	76.9075	74.2979	71.5747	69.0037
98	90.4787	89.2943	87.9759	86.5040	84.8693	83.0449	81.0134	78.7770	76.3389	73.7748	71.3276
99	91.1723	90.0733	88.8497	87.4831	85.9648	84.2690	82.3785	80.2942	78.0162	75.6103	73.2976
100	91.5998	90.5550	89.3921	88.0934	86.6511	85.0406	83.2452	81.2660	79.1022	76.8153	74.6127

SECTION III

TEACHER RETIREMENT SYSTEM OF TEXAS

OPTION 3 FACTORS - 5 YEARS CERTAIN AND LIFE THEREAFTER

OPTION 4 FACTORS - 10 YEARS CERTAIN AND LIFE THEREAFTER

Percentages to be applied to amount of single life service retirement benefits to obtain optional benefit based on ages as of last birthday of member.

Age of Member	Option 3	Option 4	Age of Member	Option 3	Option 4
40	99.98	99.89	71	98.69	95.18
41	99.97	99.88	72	98.48	94.47
42	99.97	99.86	73	98.24	93.65
43	99.97	99.85	74	97.95	92.71
44	99.96	99.82	75	97.61	91.64
45	99.95	99.80	76	97.22	90.43
46	99.95	99.77	77	96.76	89.05
47	99.94	99.74	78	96.22	87.49
48	99.93	99.71	79	95.59	85.73
49	99.92	99.67	80	94.85	83.77
50	99.91	99.63	81	93.99	81.59
51	99.90	99.59	82	92.98	79.17
52	99.88	99.54	83	91.80	76.53
53	99.86	99.48	84	90.43	73.66
54	99.85	99.43	85	88.83	70.57
55	99.83	99.37	86	86.99	67.29
56	99.81	99.31	87	84.87	63.84
57	99.80	99.24	88	82.46	60.25
58	99.78	99.15	89	79.74	56.57
59	99.76	99.05	90	76.69	52.85
60	99.73	98.94	91	73.31	49.11
61	99.69	98.79	92	69.62	45.42
62	99.65	98.61	93	65.63	41.80
63	99.59	98.41	94	61.40	38.30
64	99.53	98.17	95	56.96	34.93
65	99.46	97.90	96	52.41	31.73
66	99.37	97.59	97	47.89	28.73
67	99.27	97.23	98	43.55	25.97
68	99.16	96.82	99	39.62	23.54
69	99.03	96.35	100	36.43	21.60
70	98.87	95.81			

SECTION IV

TEACHER RETIREMENT SYSTEM OF TEXAS

OPTION 5 FACTORS JOINT AND 75% BENEFICIARY WITH POP-UP FEATURE

Percentage is applied to the amount of single life service retirement benefit in order to obtain the optional optional benefit. Each percentage is based on age as of last birthday of member and beneficiary. Benefit reverts to single life amount if beneficiary predeceases member.

Age of beneficiary	Age of Member at Date of Retirement														
	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
71	99.8926	99.8869	99.8816	99.8766	99.8721	99.8682	99.8642	99.8605	99.8569	99.8531	99.8489	99.8433	99.8361	99.8278	99.8179
72	99.8966	99.8910	99.8859	99.8810	99.8767	99.8730	99.8692	99.8657	99.8624	99.8590	99.8552	99.8500	99.8434	99.8356	99.8264
73	99.9005	99.8951	99.8901	99.8854	99.8812	99.8777	99.8741	99.8709	99.8678	99.8648	99.8613	99.8566	99.8504	99.8432	99.8347
74	99.9045	99.8992	99.8943	99.8898	99.8857	99.8824	99.8790	99.8760	99.8732	99.8704	99.8673	99.8629	99.8572	99.8506	99.8426
75	99.9084	99.9032	99.8985	99.8941	99.8902	99.8870	99.8838	99.8810	99.8784	99.8759	99.8731	99.8691	99.8639	99.8577	99.8503
76	99.9123	99.9073	99.9026	99.8984	99.8946	99.8916	99.8885	99.8859	99.8835	99.8813	99.8788	99.8752	99.8703	99.8646	99.8578
77	99.9162	99.9113	99.9068	99.9027	99.8990	99.8961	99.8932	99.8907	99.8886	99.8866	99.8844	99.8810	99.8766	99.8713	99.8650
78	99.9201	99.9153	99.9109	99.9069	99.9034	99.9006	99.8978	99.8955	99.8936	99.8918	99.8898	99.8868	99.8827	99.8778	99.8719
79	99.9239	99.9193	99.9150	99.9111	99.9078	99.9051	99.9024	99.9003	99.8985	99.8969	99.8951	99.8924	99.8886	99.8841	99.8787
80	99.9277	99.9232	99.9191	99.9153	99.9120	99.9095	99.9070	99.9049	99.9033	99.9019	99.9004	99.8979	99.8944	99.8902	99.8852
81	99.9315	99.9272	99.9231	99.9195	99.9163	99.9138	99.9114	99.9095	99.9080	99.9068	99.9055	99.9032	99.9001	99.8962	99.8916
82	99.9353	99.9310	99.9271	99.9236	99.9205	99.9181	99.9158	99.9140	99.9127	99.9116	99.9105	99.9085	99.9056	99.9020	99.8977
83	99.9390	99.9349	99.9310	99.9276	99.9247	99.9224	99.9202	99.9185	99.9173	99.9163	99.9154	99.9136	99.9109	99.9076	99.9037
84	99.9426	99.9386	99.9349	99.9316	99.9288	99.9266	99.9245	99.9229	99.9217	99.9209	99.9201	99.9185	99.9161	99.9131	99.9094
85	99.9462	99.9423	99.9388	99.9356	99.9328	99.9307	99.9287	99.9272	99.9261	99.9254	99.9248	99.9234	99.9212	99.9184	99.9150
86	99.9496	99.9460	99.9425	99.9395	99.9368	99.9347	99.9328	99.9314	99.9304	99.9298	99.9294	99.9281	99.9261	99.9236	99.9204
87	99.9531	99.9495	99.9462	99.9433	99.9407	99.9387	99.9369	99.9355	99.9347	99.9341	99.9338	99.9327	99.9309	99.9286	99.9257
88	99.9564	99.9530	99.9499	99.9470	99.9445	99.9426	99.9408	99.9396	99.9388	99.9383	99.9381	99.9372	99.9355	99.9334	99.9307
89	99.9596	99.9564	99.9534	99.9507	99.9483	99.9464	99.9447	99.9435	99.9428	99.9424	99.9423	99.9415	99.9400	99.9381	99.9356
90	99.9627	99.9597	99.9568	99.9542	99.9519	99.9502	99.9485	99.9473	99.9467	99.9464	99.9464	99.9457	99.9444	99.9426	99.9404
91	99.9657	99.9629	99.9601	99.9577	99.9555	99.9538	99.9522	99.9511	99.9504	99.9502	99.9503	99.9497	99.9485	99.9470	99.9449
92	99.9686	99.9659	99.9633	99.9610	99.9589	99.9573	99.9558	99.9547	99.9541	99.9539	99.9541	99.9536	99.9526	99.9511	99.9493
93	99.9713	99.9688	99.9664	99.9642	99.9622	99.9607	99.9593	99.9582	99.9576	99.9575	99.9577	99.9573	99.9564	99.9551	99.9535
94	99.9739	99.9716	99.9693	99.9673	99.9654	99.9640	99.9626	99.9616	99.9610	99.9609	99.9612	99.9609	99.9601	99.9589	99.9574
95	99.9763	99.9742	99.9721	99.9702	99.9684	99.9671	99.9658	99.9648	99.9643	99.9642	99.9644	99.9642	99.9636	99.9625	99.9612
96	99.9785	99.9766	99.9746	99.9729	99.9712	99.9700	99.9688	99.9678	99.9673	99.9672	99.9675	99.9674	99.9668	99.9659	99.9646
97	99.9805	99.9787	99.9769	99.9753	99.9738	99.9726	99.9715	99.9706	99.9701	99.9700	99.9703	99.9702	99.9697	99.9689	99.9677
98	99.9822	99.9805	99.9789	99.9774	99.9760	99.9749	99.9738	99.9730	99.9725	99.9724	99.9727	99.9726	99.9722	99.9714	99.9704
99	99.9835	99.9819	99.9804	99.9789	99.9776	99.9766	99.9756	99.9748	99.9743	99.9743	99.9745	99.9745	99.9741	99.9734	99.9725
100	99.9842	99.9827	99.9813	99.9799	99.9787	99.9777	99.9767	99.9760	99.9755	99.9754	99.9757	99.9757	99.9753	99.9746	99.9737

TEACHER RETIREMENT SYSTEM OF TEXAS

OPTION 5 FACTORS JOINT AND 75% BENEFICIARY WITH POP-UP FEATURE

Percentage is applied to the amount of single life service retirement benefit in order to obtain the optional optional benefit. Each percentage is based on age as of last birthday of member and beneficiary. Benefit reverts to single life amount if beneficiary predeceases member.

Age of beneficiary	Age of Member at Date of Retirement														
	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
71	99.8067	99.7940	99.7798	99.7636	99.7453	99.7245	99.7007	99.6730	99.6416	99.6057	99.5648	99.5188	99.4668	99.4090	99.3445
72	99.8160	99.8042	99.7909	99.7759	99.7588	99.7394	99.7171	99.6911	99.6616	99.6278	99.5893	99.5458	99.4967	99.4421	99.3812
73	99.8250	99.8140	99.8017	99.7877	99.7718	99.7537	99.7329	99.7086	99.6808	99.6491	99.6128	99.5718	99.5255	99.4739	99.4164
74	99.8336	99.8234	99.8120	99.7990	99.7842	99.7674	99.7480	99.7253	99.6993	99.6696	99.6354	99.5968	99.5531	99.5044	99.4502
75	99.8420	99.8325	99.8219	99.8099	99.7962	99.7806	99.7626	99.7414	99.7171	99.6893	99.6571	99.6208	99.5797	99.5338	99.4826
76	99.8500	99.8413	99.8315	99.8204	99.8077	99.7933	99.7766	99.7569	99.7342	99.7081	99.6780	99.6439	99.6052	99.5620	99.5138
77	99.8578	99.8497	99.8407	99.8304	99.8187	99.8054	99.7900	99.7717	99.7506	99.7263	99.6981	99.6661	99.6297	99.5891	99.5437
78	99.8653	99.8578	99.8495	99.8400	99.8293	99.8170	99.8028	99.7858	99.7663	99.7436	99.7173	99.6874	99.6533	99.6151	99.5725
79	99.8726	99.8657	99.8580	99.8493	99.8394	99.8282	99.8150	99.7994	99.7813	99.7602	99.7357	99.7077	99.6758	99.6401	99.6000
80	99.8796	99.8732	99.8661	99.8582	99.8491	99.8388	99.8267	99.8123	99.7956	99.7761	99.7533	99.7272	99.6974	99.6640	99.6265
81	99.8863	99.8805	99.8740	99.8667	99.8584	99.8489	99.8379	99.8246	99.8092	99.7912	99.7701	99.7458	99.7181	99.6868	99.6517
82	99.8929	99.8875	99.8815	99.8748	99.8672	99.8586	99.8485	99.8364	99.8222	99.8056	99.7860	99.7636	99.7378	99.7087	99.6759
83	99.8992	99.8942	99.8887	99.8826	99.8757	99.8679	99.8587	99.8475	99.8346	99.8193	99.8013	99.7805	99.7565	99.7295	99.6990
84	99.9053	99.9007	99.8957	99.8901	99.8838	99.8767	99.8683	99.8582	99.8463	99.8323	99.8157	99.7965	99.7744	99.7493	99.7210
85	99.9112	99.9070	99.9024	99.8973	99.8916	99.8851	99.8775	99.8683	99.8575	99.8447	99.8294	99.8118	99.7913	99.7681	99.7419
86	99.9169	99.9130	99.9088	99.9042	99.8990	99.8931	99.8863	99.8779	99.8681	99.8564	99.8424	99.8262	99.8074	99.7860	99.7618
87	99.9224	99.9189	99.9150	99.9108	99.9061	99.9008	99.8946	99.8870	99.8781	99.8674	99.8547	99.8398	99.8226	99.8029	99.7806
88	99.9278	99.9245	99.9209	99.9171	99.9128	99.9081	99.9025	99.8956	99.8876	99.8779	99.8663	99.8527	99.8369	99.8189	99.7984
89	99.9329	99.9299	99.9266	99.9231	99.9193	99.9150	99.9100	99.9038	99.8966	99.8878	99.8772	99.8649	99.8505	99.8339	99.8152
90	99.9378	99.9351	99.9321	99.9289	99.9254	99.9216	99.9171	99.9116	99.9050	99.8971	99.8876	99.8763	99.8632	99.8481	99.8310
91	99.9426	99.9400	99.9374	99.9344	99.9313	99.9279	99.9239	99.9189	99.9130	99.9059	99.8973	99.8871	99.8752	99.8614	99.8458
92	99.9472	99.9448	99.9424	99.9397	99.9369	99.9338	99.9302	99.9258	99.9206	99.9142	99.9064	99.8972	99.8864	99.8739	99.8597
93	99.9515	99.9494	99.9471	99.9447	99.9422	99.9394	99.9362	99.9323	99.9276	99.9219	99.9149	99.9067	99.8969	99.8856	99.8727
94	99.9557	99.9537	99.9517	99.9495	99.9472	99.9447	99.9419	99.9383	99.9342	99.9291	99.9228	99.9154	99.9066	99.8964	99.8848
95	99.9596	99.9578	99.9559	99.9539	99.9518	99.9497	99.9471	99.9440	99.9403	99.9358	99.9301	99.9235	99.9156	99.9064	99.8959
96	99.9632	99.9616	99.9599	99.9581	99.9562	99.9542	99.9519	99.9492	99.9459	99.9418	99.9368	99.9308	99.9237	99.9154	99.9059
97	99.9664	99.9650	99.9634	99.9618	99.9601	99.9583	99.9563	99.9538	99.9508	99.9472	99.9427	99.9373	99.9309	99.9234	99.9148
98	99.9692	99.9679	99.9665	99.9649	99.9634	99.9618	99.9599	99.9577	99.9550	99.9517	99.9476	99.9428	99.9369	99.9301	99.9223
99	99.9713	99.9701	99.9688	99.9674	99.9659	99.9644	99.9627	99.9606	99.9582	99.9552	99.9514	99.9469	99.9415	99.9352	99.9279
100	99.9727	99.9715	99.9702	99.9689	99.9675	99.9661	99.9645	99.9625	99.9601	99.9573	99.9536	99.9494	99.9443	99.9382	99.9313

TEACHER RETIREMENT SYSTEM OF TEXAS

OPTION 5 FACTORS JOINT AND 75% BENEFICIARY WITH POP-UP FEATURE

Percentage is applied to the amount of single life service retirement benefit in order to obtain the optional optional benefit. Each percentage is based on age as of last birthday of member and beneficiary. Benefit reverts to single life amount if beneficiary predeceases member.

Age of beneficiary	Age of Member at Date of Retirement														
	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
71	99.2731	99.1941	99.1068	99.0102	98.9036	98.7849	98.6526	98.5047	98.3443	98.1685	97.9744	97.7579	97.5146	97.2395	96.9263
72	99.3137	99.2391	99.1568	99.0657	98.9653	98.8536	98.7291	98.5900	98.4395	98.2748	98.0931	97.8904	97.6627	97.4048	97.1108
73	99.3527	99.2822	99.2046	99.1189	99.0244	98.9193	98.8023	98.6716	98.5304	98.3763	98.2064	98.0171	97.8043	97.5631	97.2875
74	99.3901	99.3236	99.2505	99.1698	99.0809	98.9821	98.8721	98.7494	98.6171	98.4731	98.3146	98.1380	97.9395	97.7143	97.4566
75	99.4260	99.3633	99.2945	99.2185	99.1349	99.0421	98.9388	98.8236	98.6998	98.5654	98.4176	98.2533	98.0685	97.8587	97.6182
76	99.4604	99.4014	99.3366	99.2651	99.1865	99.0994	99.0025	98.8944	98.7787	98.6533	98.5158	98.3630	98.1913	97.9963	97.7723
77	99.4935	99.4380	99.3770	99.3097	99.2360	99.1541	99.0633	98.9619	98.8538	98.7370	98.6092	98.4675	98.3083	98.1273	97.9192
78	99.5252	99.4730	99.4157	99.3525	99.2832	99.2065	99.1213	99.0262	98.9253	98.8166	98.6981	98.5668	98.4194	98.2518	98.0589
79	99.5557	99.5066	99.4528	99.3935	99.3285	99.2565	99.1766	99.0876	98.9934	98.8924	98.7825	98.6611	98.5249	98.3701	98.1916
80	99.5848	99.5388	99.4883	99.4327	99.3717	99.3043	99.2294	99.1460	99.0582	98.9644	98.8626	98.7506	98.6251	98.4824	98.3176
81	99.6128	99.5697	99.5223	99.4702	99.4131	99.3499	99.2799	99.2017	99.1199	99.0328	98.9388	98.8354	98.7200	98.5887	98.4370
82	99.6395	99.5992	99.5549	99.5061	99.4527	99.3936	99.3280	99.2549	99.1786	99.0978	99.0110	98.9159	98.8099	98.6895	98.5501
83	99.6651	99.6275	99.5861	99.5405	99.4906	99.4353	99.3739	99.3055	99.2344	99.1596	99.0795	98.9921	98.8950	98.7847	98.6571
84	99.6895	99.6544	99.6159	99.5734	99.5268	99.4751	99.4178	99.3537	99.2876	99.2183	99.1444	99.0643	98.9754	98.8748	98.7581
85	99.7127	99.6801	99.6443	99.6047	99.5613	99.5132	99.4596	99.3997	99.3381	99.2740	99.2059	99.1325	99.0515	98.9598	98.8535
86	99.7347	99.7046	99.6714	99.6346	99.5943	99.5495	99.4995	99.4435	99.3862	99.3268	99.2642	99.1971	99.1232	99.0399	98.9433
87	99.7556	99.7278	99.6971	99.6631	99.6257	99.5841	99.5375	99.4852	99.4319	99.3770	99.3194	99.2580	99.1909	99.1154	99.0279
88	99.7754	99.7498	99.7215	99.6902	99.6556	99.6170	99.5738	99.5249	99.4754	99.4246	99.3717	99.3156	99.2547	99.1865	99.1075
89	99.7941	99.7706	99.7446	99.7158	99.6840	99.6483	99.6082	99.5627	99.5167	99.4698	99.4212	99.3700	99.3148	99.2533	99.1822
90	99.8117	99.7902	99.7664	99.7400	99.7108	99.6780	99.6409	99.5986	99.5559	99.5126	99.4680	99.4213	99.3714	99.3160	99.2522
91	99.8282	99.8086	99.7869	99.7628	99.7362	99.7061	99.6719	99.6326	99.5931	99.5531	99.5122	99.4697	99.4245	99.3748	99.3178
92	99.8437	99.8259	99.8062	99.7842	99.7600	99.7325	99.7012	99.6648	99.6283	99.5915	99.5539	99.5152	99.4744	99.4299	99.3790
93	99.8582	99.8420	99.8241	99.8042	99.7823	99.7573	99.7287	99.6951	99.6615	99.6276	99.5932	99.5580	99.5211	99.4813	99.4360
94	99.8716	99.8569	99.8408	99.8228	99.8030	99.7804	99.7544	99.7235	99.6926	99.6615	99.6300	99.5980	99.5647	99.5290	99.4888
95	99.8840	99.8707	99.8561	99.8399	99.8221	99.8017	99.7781	99.7498	99.7215	99.6931	99.6643	99.6351	99.6050	99.5731	99.5374
96	99.8952	99.8832	99.8700	99.8554	99.8393	99.8210	99.7997	99.7738	99.7479	99.7219	99.6956	99.6691	99.6418	99.6131	99.5814
97	99.9051	99.8942	99.8822	99.8690	99.8545	99.8381	99.8188	99.7951	99.7714	99.7476	99.7236	99.6994	99.6746	99.6487	99.6203
98	99.9134	99.9034	99.8925	99.8805	99.8673	99.8523	99.8347	99.8130	99.7911	99.7693	99.7472	99.7250	99.7023	99.6787	99.6529
99	99.9197	99.9104	99.9003	99.8891	99.8769	99.8630	99.8468	99.8265	99.8061	99.7858	99.7652	99.7446	99.7234	99.7015	99.6777
100	99.9234	99.9146	99.9050	99.8943	99.8827	99.8695	99.8540	99.8347	99.8153	99.7958	99.7762	99.7565	99.7363	99.7155	99.6928

TEACHER RETIREMENT SYSTEM OF TEXAS

**OPTION 5 FACTORS
JOINT AND 75% BENEFICIARY WITH POP-UP FEATURE**

Percentage is applied to the amount of single life service retirement benefit in order to obtain the optional optional benefit. Each percentage is based on age as of last birthday of member and beneficiary. Benef to single life amount if beneficiary predeceases member.

Age of beneficiary	Age of Member at Date of Retirement										
	90	91	92	93	94	95	96	97	98	99	100
1	32.9812	30.7336	28.5294	26.3749	24.2826	22.2582	20.3160	18.4810	16.7798	15.2689	14.0529
2	32.9878	30.7395	28.5349	26.3798	24.2870	22.2621	20.3195	18.4840	16.7824	15.2712	14.0550
3	32.9958	30.7470	28.5418	26.3861	24.2927	22.2673	20.3242	18.4882	16.7862	15.2747	14.0581
4	33.0050	30.7556	28.5497	26.3934	24.2994	22.2734	20.3298	18.4933	16.7907	15.2788	14.0619
5	33.0154	30.7653	28.5587	26.4017	24.3071	22.2804	20.3362	18.4991	16.7960	15.2836	14.0663
6	33.0268	30.7759	28.5687	26.4110	24.3157	22.2883	20.3433	18.5056	16.8019	15.2890	14.0712
7	33.0392	30.7876	28.5796	26.4211	24.3251	22.2969	20.3513	18.5128	16.8085	15.2949	14.0767
8	33.0527	30.8003	28.5915	26.4322	24.3354	22.3064	20.3600	18.5208	16.8158	15.3016	14.0828
9	33.0671	30.8140	28.6043	26.4443	24.3465	22.3168	20.3695	18.5295	16.8237	15.3088	14.0896
10	33.0825	30.8285	28.6180	26.4571	24.3585	22.3279	20.3797	18.5389	16.8323	15.3167	14.0968
11	33.0987	30.8439	28.6325	26.4707	24.3712	22.3397	20.3906	18.5489	16.8415	15.3251	14.1046
12	33.1157	30.8599	28.6476	26.4849	24.3844	22.3520	20.4020	18.5594	16.8511	15.3340	14.1128
13	33.1334	30.8766	28.6634	26.4996	24.3982	22.3648	20.4138	18.5703	16.8611	15.3431	14.1213
14	33.1519	30.8941	28.6798	26.5151	24.4126	22.3781	20.4262	18.5817	16.8715	15.3527	14.1302
15	33.1713	30.9125	28.6971	26.5312	24.4277	22.3922	20.4391	18.5936	16.8825	15.3627	14.1395
16	33.1916	30.9317	28.7152	26.5481	24.4435	22.4068	20.4526	18.6060	16.8938	15.3732	14.1491
17	33.2131	30.9519	28.7342	26.5659	24.4600	22.4221	20.4668	18.6190	16.9058	15.3841	14.1593
18	33.2356	30.9732	28.7541	26.5845	24.4774	22.4382	20.4816	18.6326	16.9182	15.3956	14.1699
19	33.2596	30.9957	28.7752	26.6043	24.4957	22.4552	20.4973	18.6470	16.9314	15.4076	14.1810
20	33.2850	31.0196	28.7976	26.6251	24.5150	22.4730	20.5137	18.6621	16.9452	15.4203	14.1927
21	33.3122	31.0451	28.8214	26.6473	24.5356	22.4920	20.5312	18.6780	16.9598	15.4337	14.2051
22	33.3414	31.0724	28.8469	26.6710	24.5576	22.5123	20.5498	18.6951	16.9754	15.4479	14.2183
23	33.3728	31.1019	28.8744	26.6966	24.5812	22.5341	20.5697	18.7133	16.9920	15.4631	14.2323
24	33.4067	31.1337	28.9041	26.7242	24.6068	22.5576	20.5913	18.7330	17.0099	15.4794	14.2474
25	33.4436	31.1682	28.9364	26.7542	24.6346	22.5832	20.6148	18.7544	17.0295	15.4973	14.2639
26	33.4835	31.2057	28.9714	26.7868	24.6648	22.6110	20.6403	18.7778	17.0508	15.5167	14.2818
27	33.5266	31.2462	29.0093	26.8220	24.6974	22.6411	20.6679	18.8031	17.0738	15.5378	14.3013
28	33.5732	31.2899	29.0502	26.8601	24.7327	22.6737	20.6979	18.8305	17.0989	15.5607	14.3224
29	33.6233	31.3370	29.0942	26.9011	24.7708	22.7088	20.7301	18.8600	17.1258	15.5853	14.3451
30	33.6773	31.3877	29.1417	26.9453	24.8117	22.7467	20.7649	18.8918	17.1548	15.6118	14.3697
31	33.7354	31.4423	29.1928	26.9929	24.8559	22.7874	20.8024	18.9261	17.1861	15.6405	14.3961
32	33.7980	31.5011	29.2478	27.0442	24.9034	22.8313	20.8426	18.9630	17.2198	15.6713	14.4246
33	33.8653	31.5644	29.3070	27.0994	24.9546	22.8785	20.8861	19.0027	17.2561	15.7045	14.4553
34	33.9378	31.6325	29.3708	27.1588	25.0097	22.9294	20.9328	19.0455	17.2952	15.7402	14.4883
35	34.0159	31.7059	29.4395	27.2228	25.0691	22.9843	20.9832	19.0916	17.3373	15.7787	14.5239

TEACHER RETIREMENT SYSTEM OF TEXAS

OPTION 5 FACTORS JOINT AND 75% BENEFICIARY WITH POP-UP FEATURE

Percentage is applied to the amount of single life service retirement benefit in order to obtain the optional optional benefit. Each percentage is based on age as of last birthday of member and beneficiary. Benef to single life amount if beneficiary predeceases member.

Age of beneficiary	Age of Member at Date of Retirement										
	90	91	92	93	94	95	96	97	98	99	100
36	34.1000	31.7850	29.5136	27.2919	25.1332	23.0435	21.0376	19.1415	17.3828	15.8203	14.5623
37	34.1904	31.8701	29.5933	27.3662	25.2022	23.1072	21.0962	19.1951	17.4318	15.8652	14.6038
38	34.2877	31.9617	29.6791	27.4463	25.2766	23.1759	21.1595	19.2530	17.4847	15.9136	14.6485
39	34.3921	32.0600	29.7713	27.5324	25.3566	23.2499	21.2275	19.3154	17.5417	15.9657	14.6967
40	34.5042	32.1657	29.8704	27.6249	25.4426	23.3294	21.3007	19.3825	17.6030	16.0219	14.7486
41	34.6245	32.2790	29.9768	27.7243	25.5350	23.4149	21.3794	19.4546	17.6690	16.0823	14.8044
42	34.7533	32.4005	30.0909	27.8309	25.6341	23.5066	21.4639	19.5321	17.7399	16.1472	14.8645
43	34.8912	32.5306	30.2131	27.9451	25.7404	23.6050	21.5545	19.6153	17.8160	16.2169	14.9289
44	35.0388	32.6699	30.3439	28.0674	25.8542	23.7105	21.6517	19.7045	17.8976	16.2916	14.9981
45	35.1966	32.8189	30.4839	28.1984	25.9762	23.8234	21.7558	19.8001	17.9851	16.3718	15.0723
46	35.3652	32.9781	30.6337	28.3386	26.1067	23.9444	21.8674	19.9025	18.0789	16.4578	15.1518
47	35.5454	33.1484	30.7938	28.4886	26.2465	24.0739	21.9868	20.0122	18.1794	16.5499	15.2371
48	35.7378	33.3302	30.9650	28.6488	26.3959	24.2125	22.1147	20.1297	18.2870	16.6486	15.3284
49	35.9432	33.5245	31.1479	28.8202	26.5557	24.3608	22.2516	20.2555	18.4023	16.7543	15.4263
50	36.1625	33.7319	31.3432	29.0033	26.7265	24.5193	22.3980	20.3902	18.5257	16.8675	15.5312
51	36.3966	33.9533	31.5517	29.1988	26.9089	24.6887	22.5545	20.5341	18.6578	16.9887	15.6435
52	36.6463	34.1895	31.7742	29.4074	27.1036	24.8695	22.7215	20.6878	18.7988	17.1182	15.7634
53	36.9129	34.4417	32.0117	29.6301	27.3114	25.0623	22.8997	20.8517	18.9491	17.2562	15.8913
54	37.1981	34.7116	32.2659	29.8683	27.5337	25.2687	23.0903	21.0271	19.1099	17.4038	16.0281
55	37.5037	35.0008	32.5384	30.1239	27.7721	25.4900	23.2947	21.2151	19.2824	17.5621	16.1747
56	37.8317	35.3114	32.8312	30.3984	28.0283	25.7279	23.5145	21.4172	19.4678	17.7322	16.3323
57	38.1839	35.6453	33.1461	30.6940	28.3043	25.9842	23.7513	21.6351	19.6676	17.9156	16.5022
58	38.5625	36.0045	33.4852	31.0125	28.6019	26.2609	24.0071	21.8704	19.8834	18.1138	16.6858
59	38.9693	36.3908	33.8503	31.3558	28.9230	26.5596	24.2834	22.1249	20.1170	18.3283	16.8846
60	39.4059	36.8061	34.2434	31.7258	29.2695	26.8823	24.5823	22.4004	20.3701	18.5608	17.1002
61	39.8741	37.2519	34.6658	32.1240	29.6429	27.2303	24.9051	22.6983	20.6440	18.8127	17.3339
62	40.3746	37.7292	35.1186	32.5513	30.0439	27.6047	25.2525	23.0192	20.9394	19.0847	17.5864
63	40.9090	38.2392	35.6030	33.0089	30.4739	28.0064	25.6257	23.3642	21.2571	19.3773	17.8581
64	41.4789	38.7840	36.1210	33.4987	30.9346	28.4372	26.0263	23.7348	21.5987	19.6921	18.1506
65	42.0866	39.3657	36.6748	34.0231	31.4283	28.8994	26.4564	24.1331	21.9661	20.0308	18.4655
66	42.7342	39.9864	37.2666	34.5841	31.9573	29.3951	26.9182	24.5612	22.3613	20.3955	18.8046
67	43.4239	40.6485	37.8988	35.1843	32.5238	29.9266	27.4141	25.0212	22.7863	20.7880	19.1698
68	44.1577	41.3542	38.5737	35.8261	33.1304	30.4966	27.9463	25.5155	23.2435	21.2105	19.5632
69	44.9380	42.1060	39.2939	36.5120	33.7798	31.1075	28.5176	26.0468	23.7354	21.6654	19.9871
70	45.7669	42.9062	40.0619	37.2447	34.4747	31.7624	29.1308	26.6177	24.2646	22.1554	20.4439

TEACHER RETIREMENT SYSTEM OF TEXAS

OPTION 5 FACTORS JOINT AND 75% BENEFICIARY WITH POP-UP FEATURE

Percentage is applied to the amount of single life service retirement benefit in order to obtain the optional optional benefit. Each percentage is based on age as of last birthday of member and beneficiary. Benef to single life amount if beneficiary predeceases member.

Age of beneficiary	Age of Member at Date of Retirement										
	90	91	92	93	94	95	96	97	98	99	100
71	46.6464	43.7571	40.8804	38.0271	35.2179	32.4639	29.7887	27.2312	24.8339	22.6830	20.9361
72	47.5789	44.6613	41.7519	38.8619	36.0125	33.2153	30.4946	27.8903	25.4464	23.2513	21.4668
73	48.5660	45.6210	42.6791	39.7520	36.8616	34.0197	31.2516	28.5985	26.1054	23.8635	22.0389
74	49.6097	46.6384	43.6646	40.7003	37.7682	34.8805	32.0633	29.3591	26.8144	24.5229	22.6558
75	50.7116	47.7156	44.7108	41.7098	38.7356	35.8012	32.9333	30.1759	27.5770	25.2333	23.3210
76	51.8728	48.8543	45.8202	42.7832	39.7670	36.7852	33.8653	31.0528	28.3973	25.9986	24.0385
77	53.0943	50.0563	46.9949	43.9232	40.8656	37.8361	34.8632	31.9938	29.2793	26.8228	24.8122
78	54.3766	51.3226	48.2367	45.1324	42.0345	38.9575	35.9309	33.0031	30.2275	27.7106	25.6467
79	55.7195	52.6539	49.5473	46.4129	43.2765	40.1529	37.0725	34.0852	31.2465	28.6665	26.5466
80	57.1224	54.0506	50.9276	47.7669	44.5946	41.4257	38.2919	35.2445	32.3410	29.6956	27.5170
81	58.5838	55.5120	52.3782	49.1956	45.9908	42.7792	39.5931	36.4855	33.5161	30.8031	28.5631
82	60.1015	57.0370	53.8988	50.7000	47.4674	44.2163	40.9799	37.8129	34.7768	31.9945	29.6906
83	61.6722	58.6232	55.4883	52.2801	49.0253	45.7393	42.4557	39.2308	36.1283	33.2752	30.9054
84	63.2920	60.2677	57.1448	53.9352	50.6652	47.3500	44.0236	40.7435	37.5754	34.6511	32.2135
85	64.9556	61.9659	58.8650	55.6631	52.3864	49.0492	45.6856	42.3544	39.1230	36.1276	33.6210
86	66.6566	63.7126	60.6443	57.4608	54.1871	50.8366	47.4430	44.0661	40.7748	37.7097	35.1335
87	68.3877	65.5009	62.4771	59.3236	56.0641	52.7106	49.2960	45.8804	42.5341	39.4018	36.7564
88	70.1413	67.3237	64.3570	61.2464	58.0136	54.6689	51.2440	47.7988	44.4040	41.2086	38.4952
89	71.9088	69.1727	66.2764	63.2225	60.0306	56.7084	53.2857	49.8218	46.3874	43.1345	40.3558
90	73.6809	71.0384	68.2262	65.2437	62.1080	58.8236	55.4179	51.9484	48.4853	45.1828	42.3430
91	75.4476	72.9106	70.1961	67.3004	64.2373	61.0079	57.6358	54.1765	50.6982	47.3564	44.4616
92	77.1978	74.7773	72.1739	69.3805	66.4073	63.2512	59.9318	56.5010	53.0238	49.6557	46.7144
93	78.9195	76.6253	74.1454	71.4693	68.6038	65.5409	62.2951	58.9139	55.4575	52.0796	49.1030
94	80.5982	78.4384	76.0929	73.5481	70.8074	67.8579	64.7085	61.4006	57.9883	54.6208	51.6236
95	82.2155	80.1959	77.9932	75.5916	72.9913	70.1749	67.1453	63.9370	60.5958	57.2638	54.2653
96	83.7448	81.8675	79.8125	77.5621	75.1142	72.4477	69.5598	66.4777	63.2375	59.9706	56.9949
97	85.1476	83.4095	81.5014	79.4044	77.1149	74.6090	71.8793	68.9467	65.8371	62.6679	59.7444
98	86.3670	84.7574	82.9867	81.0358	78.9002	76.5550	73.9894	71.2196	68.2630	65.2225	62.3840
99	87.3182	85.8141	84.1578	82.3305	80.3277	78.1242	75.7081	73.0925	70.2899	67.3919	64.6641
100	87.9076	86.4714	84.8896	83.1437	81.2295	79.1224	76.8105	74.3058	71.6189	68.8356	66.2085