Table 11. Comparisons of the Q-yield measure for triangular processes with mode $c = 11(1)49$, $(LSL,\ USL) = (10,\ 50)$, and $T = 30(5)45$.

c	μ	$T = 30$	$T = 35$	$T = 40$	$T = 45$
11	23.667	0.6828	0.6404	0.5979	0.5551
12	24.000	0.6981	0.6557	0.6118	0.5679
13	24.333	0.7129	0.6687	0.6250	0.5821
14	24.667	0.7259	0.6832	0.6388	0.5936
15	25.000	0.7396	0.6952	0.6515	0.6059
16	25.333	0.7517	0.7088	0.6627	0.6179
17	25.667	0.7611	0.7208	0.6760	0.6282
18	26.000	0.7733	0.7322	0.6877	0.6411
19	26.333	0.7834	0.7430	0.6990	0.6524
20	26.667	0.7899	0.7532	0.7100	0.6633
21	27.000	0.7992	0.7630	0.7203	0.6739
22	27.333	0.8073	0.7715	0.7304	0.6809
23	27.667	0.8128	0.7779	0.7399	0.6943
24	28.000	0.8180	0.7880	0.7489	0.7040
25	28.333	0.8229	0.7963	0.7591	0.7133
26	28.667	0.8257	0.8022	0.7665	0.7232
27	29.000	0.8297	0.8067	0.7740	0.7307
28	29.333	0.8314	0.8142	0.7829	0.7355
29	29.667	0.8328	0.8188	0.7887	0.7490
30	30.000	**0.8333**	0.8219	0.7930	0.7560
31	30.333	0.8328	0.8267	0.8018	0.7645
32	30.667	0.8314	0.8290	0.8080	0.7709
33	31.000	0.8297	0.8325	0.8130	0.7790
34	31.333	0.8257	0.8329	0.8163	0.7853
35	31.667	0.8229	**0.8333**	0.8222	0.7918
36	32.000	0.8180	0.8329	0.8260	0.7980
37	32.333	0.8128	0.8314	0.8284	0.8043
38	32.667	0.8073	0.8284	0.8314	0.8066
39	33.000	0.7992	0.8259	0.8331	0.8147
40	33.333	0.7899	0.8199	**0.8333**	0.8203
41	33.667	0.7834	0.8157	0.8326	0.8242
42	34.000	0.7733	0.8071	0.8305	0.8275
43	34.333	0.7611	0.8001	0.8272	0.8308
44	34.667	0.7517	0.7906	0.8226	0.8327
45	35.000	0.7396	0.7796	0.8147	**0.8333**
46	35.333	0.7259	0.7686	0.8065	0.8321
47	35.667	0.7129	0.7549	0.7958	0.8289
48	36.000	0.6981	0.7409	0.7824	0.8206
49	36.333	0.6828	0.7254	0.7674	0.8085

Table 12. Comparisons of the Q-yield measure for normal processes with $\mu = 10(1)50$, $\sigma = 10/3,\ 20/3$, $(LSL,\ USL) = (10,\ 50)$, and $T = 30(5)45$.

	$\sigma = 10/3$				$\sigma = 20/3$			
μ	$T = 30$	$T = 35$	$T = 40$	$T = 45$	$T = 30$	$T = 35$	$T = 40$	$T = 45$
10	0.119	0.098	0.082	0.071	0.210	0.177	0.153	0.134
11	0.167	0.137	0.116	0.101	0.249	0.210	0.182	0.159
12	0.223	0.184	0.156	0.136	0.290	0.246	0.213	0.187
13	0.286	0.236	0.201	0.175	0.334	0.285	0.247	0.218
14	0.352	0.292	0.250	0.218	0.381	0.326	0.283	0.250
15	0.420	0.350	0.300	0.262	0.428	0.368	0.321	0.284
16	0.487	0.409	0.351	0.307	0.476	0.412	0.360	0.319
17	0.552	0.466	0.401	0.352	0.524	0.456	0.400	0.355
18	0.613	0.521	0.451	0.396	0.572	0.500	0.440	0.392
19	0.670	0.573	0.498	0.439	0.617	0.543	0.480	0.429
20	0.722	0.622	0.543	0.481	0.661	0.586	0.520	0.466
21	0.770	0.669	0.587	0.521	0.702	0.627	0.559	0.502
22	0.812	0.712	0.628	0.559	0.740	0.666	0.597	0.538
23	0.850	0.752	0.667	0.596	0.774	0.703	0.634	0.573
24	0.882	0.789	0.703	0.631	0.804	0.737	0.669	0.606
25	0.910	0.822	0.738	0.664	0.830	0.769	0.702	0.639
26	0.932	0.853	0.770	0.696	0.851	0.797	0.733	0.670
27	0.950	0.880	0.800	0.726	0.868	0.822	0.761	0.699
28	0.962	0.904	0.828	0.755	0.880	0.843	0.787	0.727
29	0.970	0.924	0.853	0.782	0.887	0.860	0.811	0.753
30	**0.972**	0.942	0.877	0.807	**0.890**	0.873	0.831	0.777
31	0.970	0.955	0.898	0.831	0.887	0.882	0.849	0.799
32	0.962	0.965	0.916	0.853	0.880	**0.887**	0.862	0.818
33	0.950	0.970	0.933	0.873	0.868	0.886	0.872	0.835
34	0.932	**0.971**	0.947	0.892	0.851	0.881	0.878	0.848
35	0.910	0.966	0.958	0.909	0.830	0.870	**0.879**	0.858
36	0.882	0.956	0.965	0.925	0.804	0.854	0.875	0.865
37	0.850	0.938	**0.968**	0.938	0.774	0.833	0.866	**0.866**
38	0.812	0.914	0.966	0.949	0.740	0.806	0.850	0.863
39	0.770	0.881	0.957	0.957	0.702	0.775	0.829	0.854
40	0.722	0.840	0.939	**0.961**	0.661	0.738	0.802	0.839
41	0.670	0.791	0.910	0.959	0.617	0.697	0.769	0.818
42	0.613	0.734	0.868	0.947	0.572	0.653	0.731	0.790
43	0.552	0.669	0.813	0.923	0.524	0.605	0.687	0.756
44	0.487	0.598	0.744	0.882	0.476	0.555	0.640	0.716
45	0.420	0.520	0.663	0.823	0.428	0.503	0.588	0.671
46	0.352	0.440	0.573	0.743	0.381	0.451	0.534	0.621
47	0.286	0.360	0.477	0.646	0.334	0.399	0.479	0.567
48	0.223	0.283	0.381	0.538	0.290	0.349	0.424	0.512
49	0.167	0.213	0.290	0.426	0.249	0.301	0.370	0.455
50	0.119	0.153	0.210	0.320	0.210	0.256	0.319	0.398

Table 13. Comparisons among the six indices for normal processes with various μ, fixed $\sigma = 20/3$, and $(LSL,\ T,\ USL) = (10,\ 30,\ 50)$.

μ	Y	Y_q	C_p	C_{pk}	C_{pm}	C_{pmk}
10	0.500	0.210	**1.000**	0.000	0.316	0.000
11	0.560	0.249	**1.000**	0.050	0.331	0.017
12	0.618	0.290	**1.000**	0.100	0.347	0.035
13	0.674	0.334	**1.000**	0.150	0.365	0.055
14	0.726	0.381	**1.000**	0.200	0.385	0.077
15	0.773	0.428	**1.000**	0.250	0.406	0.102
16	0.816	0.476	**1.000**	0.300	0.430	0.129
17	0.853	0.524	**1.000**	0.350	0.456	0.160
18	0.885	0.572	**1.000**	0.400	0.486	0.194
19	0.912	0.617	**1.000**	0.450	0.518	0.233
20	0.933	0.661	**1.000**	0.500	0.555	0.277
21	0.951	0.702	**1.000**	0.550	0.595	0.327
22	0.964	0.740	**1.000**	0.600	0.640	0.384
23	0.974	0.774	**1.000**	0.650	0.690	0.449
24	0.982	0.804	**1.000**	0.700	0.743	0.520
25	0.988	0.830	**1.000**	0.750	0.800	0.600
26	0.992	0.851	**1.000**	0.800	0.857	0.686
27	0.994	0.868	**1.000**	0.850	0.912	0.775
28	0.996	0.880	**1.000**	0.900	0.958	0.862
29	**0.997**	0.887	**1.000**	0.950	0.989	0.939
30	**0.997**	**0.890**	**1.000**	**1.000**	**1.000**	**1.000**
31	**0.997**	0.887	**1.000**	0.950	0.989	0.939
32	0.996	0.880	**1.000**	0.900	0.958	0.862
33	0.994	0.868	**1.000**	0.850	0.912	0.775
34	0.992	0.851	**1.000**	0.800	0.857	0.686
35	0.988	0.830	**1.000**	0.750	0.800	0.600
36	0.982	0.804	**1.000**	0.700	0.743	0.520
37	0.974	0.774	**1.000**	0.650	0.690	0.449
38	0.964	0.740	**1.000**	0.600	0.640	0.384
39	0.951	0.702	**1.000**	0.550	0.595	0.327
40	0.933	0.661	**1.000**	0.500	0.555	0.277
41	0.912	0.617	**1.000**	0.450	0.518	0.233
42	0.885	0.572	**1.000**	0.400	0.486	0.194
43	0.853	0.524	**1.000**	0.350	0.456	0.160
44	0.816	0.476	**1.000**	0.300	0.430	0.129
45	0.773	0.428	**1.000**	0.250	0.406	0.102
46	0.726	0.381	**1.000**	0.200	0.385	0.077
47	0.674	0.334	**1.000**	0.150	0.365	0.055
48	0.618	0.290	**1.000**	0.100	0.347	0.035
49	0.560	0.249	**1.000**	0.050	0.331	0.017
50	0.500	0.210	**1.000**	0.000	0.316	0.000

Table 14. Comparisons among the six indices for normal processes with various μ, fixed $\sigma = 10/3$, and $(LSL,\ T,\ USL) = (10,\ 40,\ 50)$.

μ	Y	Y_q	C_p	C_{pk}	C_{pm}	C_{pmk}
10	0.500	0.082	**2.000**	0.000	0.221	0.000
11	0.618	0.116	**2.000**	0.100	0.228	0.011
12	0.726	0.156	**2.000**	0.200	0.236	0.024
13	0.816	0.201	**2.000**	0.300	0.245	0.037
14	0.885	0.250	**2.000**	0.400	0.254	0.051
15	0.933	0.300	**2.000**	0.500	0.264	0.066
16	0.964	0.351	**2.000**	0.600	0.275	0.083
17	0.982	0.401	**2.000**	0.700	0.287	0.100
18	0.992	0.451	**2.000**	0.800	0.300	0.120
19	0.997	0.498	**2.000**	0.900	0.314	0.141
20	0.999	0.543	**2.000**	1.000	0.329	0.164
21	**1.000**	0.587	**2.000**	1.100	0.346	0.190
22	**1.000**	0.628	**2.000**	1.200	0.364	0.219
23	**1.000**	0.667	**2.000**	1.300	0.385	0.250
24	**1.000**	0.703	**2.000**	1.400	0.408	0.286
25	**1.000**	0.738	**2.000**	1.500	0.434	0.325
26	**1.000**	0.770	**2.000**	1.600	0.463	0.371
27	**1.000**	0.800	**2.000**	1.700	0.497	0.422
28	**1.000**	0.828	**2.000**	1.800	0.535	0.482
29	**1.000**	0.853	**2.000**	1.900	0.580	0.551
30	**1.000**	0.877	**2.000**	**2.000**	0.633	0.632
31	**1.000**	0.898	**2.000**	1.900	0.695	0.660
32	**1.000**	0.916	**2.000**	1.800	0.769	0.692
33	**1.000**	0.933	**2.000**	1.700	0.860	0.731
34	**1.000**	0.947	**2.000**	1.600	0.971	0.777
35	**1.000**	0.958	**2.000**	1.500	1.109	0.832
36	**1.000**	0.965	**2.000**	1.400	1.281	0.896
37	**1.000**	**0.968**	**2.000**	1.300	1.487	0.966
38	**1.000**	0.966	**2.000**	1.200	1.715	1.029
39	**1.000**	0.957	**2.000**	1.100	1.916	**1.054**
40	0.999	0.939	**2.000**	1.000	**2.000**	1.000
41	0.997	0.910	**2.000**	0.900	1.916	0.862
42	0.992	0.868	**2.000**	0.800	1.715	0.686
43	0.982	0.813	**2.000**	0.700	1.487	0.520
44	0.964	0.744	**2.000**	0.600	1.281	0.384
45	0.933	0.663	**2.000**	0.500	1.109	0.277
46	0.885	0.573	**2.000**	0.400	0.971	0.194
47	0.816	0.477	**2.000**	0.300	0.860	0.129
48	0.726	0.381	**2.000**	0.200	0.769	0.077
49	0.618	0.290	**2.000**	0.100	0.695	0.035
50	0.500	0.210	**2.000**	0.000	0.633	0.000

Table 15. Comparisons among the six indices for normal processes with various μ, fixed $\sigma = 20/3$, and $(LSL,\ T,\ USL) = (10,\ 40,\ 50)$.

μ	Y	Y_q	C_p	C_{pk}	C_{pm}	C_{pmk}
10	0.500	0.153	**1.000**	0.000	0.217	0.000
11	0.560	0.182	**1.000**	0.050	0.224	0.011
12	0.618	0.213	**1.000**	0.100	0.232	0.023
13	0.674	0.247	**1.000**	0.150	0.240	0.036
14	0.726	0.283	**1.000**	0.200	0.248	0.050
15	0.773	0.321	**1.000**	0.250	0.258	0.064
16	0.816	0.360	**1.000**	0.300	0.268	0.080
17	0.853	0.400	**1.000**	0.350	0.278	0.097
18	0.885	0.440	**1.000**	0.400	0.290	0.116
19	0.912	0.480	**1.000**	0.450	0.303	0.136
20	0.933	0.520	**1.000**	0.500	0.316	0.158
21	0.951	0.559	**1.000**	0.550	0.331	0.182
22	0.964	0.597	**1.000**	0.600	0.347	0.208
23	0.974	0.634	**1.000**	0.650	0.365	0.237
24	0.982	0.669	**1.000**	0.700	0.385	0.269
25	0.988	0.702	**1.000**	0.750	0.406	0.305
26	0.992	0.733	**1.000**	0.800	0.430	0.344
27	0.994	0.761	**1.000**	0.850	0.456	0.388
28	0.996	0.787	**1.000**	0.900	0.486	0.437
29	**0.997**	0.811	**1.000**	0.950	0.518	0.492
30	**0.997**	0.831	**1.000**	**1.000**	0.555	0.555
31	**0.997**	0.849	**1.000**	0.950	0.595	0.566
32	0.996	0.862	**1.000**	0.900	0.640	0.576
33	0.994	0.872	**1.000**	0.850	0.690	0.587
34	0.992	0.878	**1.000**	0.800	0.743	0.595
35	0.988	**0.879**	**1.000**	0.750	0.800	**0.600**
36	0.982	0.875	**1.000**	0.700	0.857	**0.600**
37	0.974	0.866	**1.000**	0.650	0.912	0.593
38	0.964	0.850	**1.000**	0.600	0.958	0.575
39	0.951	0.829	**1.000**	0.550	0.989	0.544
40	0.933	0.802	**1.000**	0.500	**1.000**	0.500
41	0.912	0.769	**1.000**	0.450	0.989	0.445
42	0.885	0.731	**1.000**	0.400	0.958	0.383
43	0.853	0.687	**1.000**	0.350	0.912	0.319
44	0.816	0.640	**1.000**	0.300	0.857	0.257
45	0.773	0.588	**1.000**	0.250	0.800	0.200
46	0.726	0.534	**1.000**	0.200	0.743	0.149
47	0.674	0.479	**1.000**	0.150	0.690	0.104
48	0.618	0.424	**1.000**	0.100	0.640	0.064
49	0.560	0.370	**1.000**	0.050	0.595	0.030
50	0.500	0.319	**1.000**	0.000	0.555	0.000

Table 16. A sample observations of size $n = 150$.

55	59	46	68	50	43	58	50	70	56	51	57	78	47	54
61	65	44	52	57	60	43	58	55	59	54	50	59	43	53
52	58	46	52	44	45	58	56	49	43	57	85	46	53	59
64	60	46	65	66	50	66	48	68	58	53	48	72	51	57
51	48	64	52	61	59	47	61	54	59	65	57	57	45	47
61	41	43	62	62	61	46	61	51	55	56	72	69	57	55
88	62	57	60	69	54	61	56	55	45	72	45	60	49	82
52	43	62	45	60	45	61	59	49	56	47	77	46	53	56
65	53	68	45	66	62	52	66	71	73	70	52	58	56	81
52	42	57	64	56	63	63	61	70	53	47	62	53	55	59