

## B Tables

### B.1 Three Place Tables of Binomial Distributions: $P(X = k)$

Example: With  $n = 5$ ,  $p = .70$  the probability of 3 successes ( $k = 3$ ) is .309.  
 Note: A value 0+ means the actual probability is  $< .0005$  but greater than 0.

# trials		Probability p of Success													
n	successes k	.01	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95	.99	k
2	0	.980	.903	.810	.640	.490	.360	.250	.160	.090	.040	.010	.003	0+	0
	1	.020	.095	.180	.320	.420	.480	.500	.480	.420	.320	.180	.095	.020	1
	2	0+	.003	.010	.040	.090	.160	.250	.360	.490	.640	.810	.903	.980	2
3	0	.970	.857	.729	.512	.343	.216	.125	.064	.027	.008	.001	0+	0+	0
	1	.029	.135	.243	.384	.441	.432	.375	.288	.189	.096	.027	.007	0+	1
	2	0+	.007	.027	.096	.189	.288	.375	.432	.441	.384	.243	.135	.029	2
	3	0+	0+	.001	.008	.027	.064	.125	.216	.343	.512	.729	.857	.970	3
4	0	.961	.815	.656	.410	.240	.130	.063	.026	.008	.002	0+	0+	0+	0
	1	.039	.171	.292	.410	.412	.346	.250	.154	.076	.026	.004	0+	0+	1
	2	.001	.014	.049	.154	.265	.346	.375	.346	.265	.154	.049	.014	.001	2
	3	0+	0+	.004	.026	.076	.154	.250	.346	.412	.410	.292	.171	.039	3
	4	0+	0+	0+	.002	.008	.026	.063	.130	.240	.410	.656	.815	.961	4
5	0	.951	.774	.590	.328	.168	.078	.031	.010	.002	0+	0+	0+	0+	0
	1	.048	.204	.328	.410	.360	.259	.156	.077	.028	.006	0+	0+	0+	1
	2	.001	.021	.073	.205	.309	.346	.313	.230	.132	.051	.008	.001	0+	2
	3	0+	.001	.008	.051	.132	.230	.313	.346	.309	.205	.073	.021	.001	3
	4	0+	0+	0+	.006	.028	.077	.156	.259	.360	.410	.328	.204	.048	4
	5	0+	0+	0+	0+	.002	.010	.031	.078	.168	.328	.590	.774	.951	5
6	0	.941	.735	.531	.262	.118	.047	.016	.004	.001	0+	0+	0+	0+	0
	1	.057	.232	.354	.393	.303	.187	.094	.037	.010	.002	0+	0+	0+	1
	2	.001	.031	.098	.246	.324	.311	.234	.138	.060	.015	.001	0+	0+	2
	3	0+	.002	.015	.082	.185	.276	.313	.276	.185	.082	.015	.002	0+	3
	4	0+	0+	.001	.015	.060	.138	.234	.311	.324	.246	.098	.031	.001	4
	5	0+	0+	0+	.002	.010	.037	.094	.187	.303	.393	.354	.232	.057	5
	6	0+	0+	0+	0+	.001	.004	.016	.047	.118	.262	.531	.735	.941	6
7	0	.932	.698	.478	.210	.082	.028	.008	.002	0+	0+	0+	0+	0+	0
	1	.066	.257	.372	.367	.247	.131	.055	.017	.004	0+	0+	0+	0+	1
	2	.002	.041	.124	.275	.318	.261	.164	.077	.025	.004	0+	0+	0+	2
	3	0+	.004	.023	.115	.227	.290	.273	.194	.097	.029	.003	0+	0+	3
	4	0+	0+	.003	.029	.097	.194	.273	.290	.227	.115	.023	.004	0+	4
	5	0+	0+	0+	.004	.025	.077	.164	.261	.318	.275	.124	.041	.002	5
	6	0+	0+	0+	0+	.004	.017	.055	.131	.247	.367	.372	.257	.066	6
	7	0+	0+	0+	0+	0+	.002	.008	.028	.082	.210	.478	.698	.932	7
8	0	.923	.663	.430	.168	.058	.017	.004	.001	0+	0+	0+	0+	0+	0
	1	.075	.279	.383	.336	.198	.090	.031	.008	.001	0+	0+	0+	0+	1
	2	.003	.051	.149	.294	.296	.209	.109	.041	.010	.001	0+	0+	0+	2
	3	0+	.005	.033	.147	.254	.279	.219	.124	.047	.009	0+	0+	0+	3
	4	0+	0+	.005	.046	.136	.232	.273	.232	.136	.046	.005	0+	0+	4
	5	0+	0+	0+	.009	.047	.124	.219	.279	.254	.147	.033	.005	0+	5
	6	0+	0+	0+	.001	.010	.041	.109	.209	.296	.294	.149	.051	.003	6
	7	0+	0+	0+	0+	.001	.008	.031	.090	.198	.336	.383	.279	.075	7
	8	0+	0+	0+	0+	0+	.001	.004	.017	.058	.168	.430	.663	.923	8
		.01	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95	.99	

B Tables

# trials successes		Probability p of Success													
n	k	.01	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95	.99	k
9	0	.914	.630	.387	.134	.040	.010	.002	0+	0+	0+	0+	0+	0+	0
	1	.083	.299	.387	.302	.156	.060	.018	.004	0+	0+	0+	0+	0+	1
	2	.003	.063	.172	.302	.267	.161	.070	.021	.004	0+	0+	0+	0+	2
	3	0+	.008	.045	.176	.267	.251	.164	.074	.021	.003	0+	0+	0+	3
	4	0+	.001	.007	.066	.172	.251	.246	.167	.074	.017	.001	0+	0+	4
	5	0+	0+	.001	.017	.074	.167	.246	.251	.172	.066	.007	.001	0+	5
	6	0+	0+	0+	.003	.021	.074	.164	.251	.267	.176	.045	.008	0+	6
	7	0+	0+	0+	0+	.004	.021	.070	.161	.267	.302	.172	.063	.003	7
	8	0+	0+	0+	0+	0+	.004	.018	.060	.156	.302	.387	.299	.083	8
	9	0+	0+	0+	0+	0+	0+	.002	.010	.040	.134	.387	.630	.914	9
10	0	.904	.599	.349	.107	.028	.006	.001	0+	0+	0+	0+	0+	0+	0
	1	.091	.315	.387	.268	.121	.040	.010	.002	0+	0+	0+	0+	0+	1
	2	.004	.075	.194	.302	.233	.121	.044	.011	.001	0+	0+	0+	0+	2
	3	0+	.010	.057	.201	.267	.215	.117	.042	.009	.001	0+	0+	0+	3
	4	0+	.001	.011	.088	.200	.251	.205	.111	.037	.006	0+	0+	0+	4
	5	0+	0+	.001	.026	.103	.201	.246	.201	.103	.026	.001	0+	0+	5
	6	0+	0+	0+	.006	.037	.111	.205	.251	.200	.088	.011	.001	0+	6
	7	0+	0+	0+	.001	.009	.042	.117	.215	.267	.201	.057	.010	0+	7
	8	0+	0+	0+	0+	.001	.011	.044	.121	.233	.302	.194	.075	.004	8
	9	0+	0+	0+	0+	0+	.002	.010	.040	.121	.268	.387	.315	.091	9
	10	0+	0+	0+	0+	0+	0+	.001	.006	.028	.107	.349	.599	.904	10
11	0	.895	.569	.314	.086	.020	.004	0+	0+	0+	0+	0+	0+	0+	0
	1	.099	.329	.384	.236	.093	.027	.005	.001	0+	0+	0+	0+	0+	1
	2	.005	.087	.213	.295	.200	.089	.027	.005	.001	0+	0+	0+	0+	2
	3	0+	.014	.071	.221	.257	.177	.081	.023	.004	0+	0+	0+	0+	3
	4	0+	.001	.016	.111	.220	.236	.161	.070	.017	.002	0+	0+	0+	4
	5	0+	0+	.002	.039	.132	.221	.226	.147	.057	.010	0+	0+	0+	5
	6	0+	0+	0+	.010	.057	.147	.226	.221	.132	.039	.002	0+	0+	6
	7	0+	0+	0+	.002	.017	.070	.161	.236	.220	.111	.016	.001	0+	7
	8	0+	0+	0+	0+	.004	.023	.081	.177	.257	.221	.071	.014	0+	8
	9	0+	0+	0+	0+	.001	.005	.027	.089	.200	.295	.213	.087	.005	9
	10	0+	0+	0+	0+	0+	.001	.005	.027	.093	.236	.384	.329	.099	10
	11	0+	0+	0+	0+	0+	0+	0+	.004	.020	.086	.314	.569	.895	11
12	0	.886	.540	.282	.069	.014	.002	0+	0+	0+	0+	0+	0+	0+	0
	1	.107	.341	.377	.206	.071	.017	.003	0+	0+	0+	0+	0+	0+	1
	2	.006	.099	.230	.283	.168	.064	.016	.002	0+	0+	0+	0+	0+	2
	3	0+	.017	.085	.236	.240	.142	.054	.012	.001	0+	0+	0+	0+	3
	4	0+	.002	.021	.133	.231	.213	.121	.042	.008	.001	0+	0+	0+	4
	5	0+	0+	.004	.053	.158	.227	.193	.101	.029	.003	0+	0+	0+	5
	6	0+	0+	0+	.016	.079	.177	.226	.177	.079	.016	0+	0+	0+	6
	7	0+	0+	0+	.003	.029	.101	.193	.227	.158	.053	.004	0+	0+	7
	8	0+	0+	0+	.001	.008	.042	.121	.213	.231	.133	.021	.002	0+	8
	9	0+	0+	0+	0+	.001	.012	.054	.142	.240	.236	.085	.017	0+	9
	10	0+	0+	0+	0+	0+	.002	.016	.064	.168	.283	.230	.099	.006	10
	11	0+	0+	0+	0+	0+	0+	.003	.017	.071	.206	.377	.341	.107	11
	12	0+	0+	0+	0+	0+	0+	0+	.002	.014	.069	.282	.540	.886	12
		.01	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95	.99	

B Tables

# trials	successes	Probability p of Success													k
		.01	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95	.99	
13	0	.878	.513	.254	.055	.010	.001	0+	0+	0+	0+	0+	0+	0+	0
	1	.115	.351	.367	.179	.054	.011	.002	0+	0+	0+	0+	0+	0+	1
	2	.007	.111	.245	.268	.139	.045	.010	.001	0+	0+	0+	0+	0+	2
	3	0+	.021	.100	.246	.218	.111	.035	.006	.001	0+	0+	0+	0+	3
	4	0+	.003	.028	.154	.234	.184	.087	.024	.003	0+	0+	0+	0+	4
	5	0+	0+	.006	.069	.180	.221	.157	.066	.014	.001	0+	0+	0+	5
	6	0+	0+	.001	.023	.103	.197	.209	.131	.044	.006	0+	0+	0+	6
	7	0+	0+	0+	.006	.044	.131	.209	.197	.103	.023	.001	0+	0+	7
	8	0+	0+	0+	.001	.014	.066	.157	.221	.180	.069	.006	0+	0+	8
	9	0+	0+	0+	0+	.003	.024	.087	.184	.234	.154	.028	.003	0+	9
	10	0+	0+	0+	0+	.001	.006	.035	.111	.218	.246	.100	.021	0+	10
	11	0+	0+	0+	0+	0+	.001	.010	.045	.139	.268	.245	.111	.007	11
	12	0+	0+	0+	0+	0+	0+	.002	.011	.054	.179	.367	.351	.115	12
13	0+	0+	0+	0+	0+	0+	0+	.001	.010	.055	.254	.513	.878	13	
14	0	.869	.488	.229	.044	.007	.001	0+	0+	0+	0+	0+	0+	0	
	1	.123	.359	.356	.154	.041	.007	.001	0+	0+	0+	0+	0+	0+	1
	2	.008	.123	.257	.250	.113	.032	.006	.001	0+	0+	0+	0+	0+	2
	3	0+	.026	.114	.250	.194	.085	.022	.003	0+	0+	0+	0+	0+	3
	4	0+	.004	.035	.172	.229	.155	.061	.014	.001	0+	0+	0+	0+	4
	5	0+	0+	.008	.086	.196	.207	.122	.041	.007	0+	0+	0+	0+	5
	6	0+	0+	.001	.032	.126	.207	.183	.092	.023	.002	0+	0+	0+	6
	7	0+	0+	0+	.009	.062	.157	.209	.157	.062	.009	0+	0+	0+	7
	8	0+	0+	0+	.002	.023	.092	.183	.207	.126	.032	.001	0+	0+	8
	9	0+	0+	0+	0+	.007	.041	.122	.207	.196	.086	.008	0+	0+	9
	10	0+	0+	0+	0+	.001	.014	.061	.155	.229	.172	.035	.004	0+	10
	11	0+	0+	0+	0+	0+	.003	.022	.085	.194	.250	.114	.026	0+	11
	12	0+	0+	0+	0+	0+	.001	.006	.032	.113	.250	.257	.123	.008	12
	13	0+	0+	0+	0+	0+	0+	.001	.007	.041	.154	.356	.359	.123	13
14	0+	0+	0+	0+	0+	0+	0+	.001	.007	.044	.229	.488	.869	14	
15	0	.860	.463	.206	.035	.005	0+	0+	0+	0+	0+	0+	0+	0	
	1	.130	.366	.343	.132	.031	.005	0+	0+	0+	0+	0+	0+	0+	1
	2	.009	.135	.267	.231	.092	.022	.003	0+	0+	0+	0+	0+	0+	2
	3	0+	.031	.129	.250	.170	.063	.014	.002	0+	0+	0+	0+	0+	3
	4	0+	.005	.043	.188	.219	.127	.042	.007	.001	0+	0+	0+	0+	4
	5	0+	.001	.010	.103	.206	.186	.092	.024	.003	0+	0+	0+	0+	5
	6	0+	0+	.002	.043	.147	.207	.153	.061	.012	.001	0+	0+	0+	6
	7	0+	0+	0+	.014	.081	.177	.196	.118	.035	.003	0+	0+	0+	7
	8	0+	0+	0+	.003	.035	.118	.196	.177	.081	.014	0+	0+	0+	8
	9	0+	0+	0+	.001	.012	.061	.153	.207	.147	.043	.002	0+	0+	9
	10	0+	0+	0+	0+	.003	.024	.092	.186	.206	.103	.010	.001	0+	10
	11	0+	0+	0+	0+	.001	.007	.042	.127	.219	.188	.043	.005	0+	11
	12	0+	0+	0+	0+	0+	.002	.014	.063	.170	.250	.129	.031	0+	12
	13	0+	0+	0+	0+	0+	0+	.003	.022	.092	.231	.267	.135	.009	13
	14	0+	0+	0+	0+	0+	0+	0+	.005	.031	.132	.343	.366	.130	14
	15	0+	0+	0+	0+	0+	0+	0+	0+	.005	.035	.206	.463	.860	15

**B.2 Three Place Tables of Cumulative Binomial Distributions:  $P(X \leq k)$**

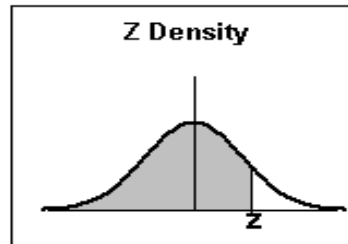
Example: With  $n = 20$ ,  $p = .70$ , the probability of 15 or fewer successes is .762.  
 Note: A value of 1- means the actual cumulative probability is  $> .9995$  and  $< 1$

# trials		Probability p of Success													
n	successes k	.01	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95	.99	k
20	0	.818	.358	.122	.012	.001	0+	0+	0+	0+	0+	0+	0+	0+	0
	1	.983	.736	.392	.069	.008	.001	0+	0+	0+	0+	0+	0+	0+	1
	2	.999	.925	.677	.206	.035	.004	0+	0+	0+	0+	0+	0+	0+	2
	3	1-	.984	.867	.411	.107	.016	.001	0+	0+	0+	0+	0+	0+	3
	4	1-	.997	.957	.630	.238	.051	.006	0+	0+	0+	0+	0+	0+	4
	5	1-	1-	.989	.804	.416	.126	.021	.002	0+	0+	0+	0+	0+	5
	6	1-	1-	.998	.913	.608	.250	.058	.006	0+	0+	0+	0+	0+	6
	7	1-	1-	1-	.968	.772	.416	.132	.021	.001	0+	0+	0+	0+	7
	8	1-	1-	1-	.990	.887	.596	.252	.057	.005	0+	0+	0+	0+	8
	9	1-	1-	1-	.997	.952	.755	.412	.128	.017	.001	0+	0+	0+	9
	10	1-	1-	1-	.999	.983	.872	.588	.245	.048	.003	0+	0+	0+	10
	11	1-	1-	1-	1-	.995	.943	.748	.404	.113	.010	0+	0+	0+	11
	12	1-	1-	1-	1-	.999	.979	.868	.584	.228	.032	0+	0+	0+	12
	13	1-	1-	1-	1-	1-	.994	.942	.750	.392	.087	.002	0+	0+	13
	14	1-	1-	1-	1-	1-	.998	.979	.874	.584	.196	.011	0+	0+	14
	15	1-	1-	1-	1-	1-	1-	.994	.949	.762	.370	.043	.003	0+	15
	16	1-	1-	1-	1-	1-	1-	.999	.984	.893	.589	.133	.016	0+	16
	17	1-	1-	1-	1-	1-	1-	1-	.996	.965	.794	.323	.075	.001	17
	18	1-	1-	1-	1-	1-	1-	1-	.999	.992	.931	.608	.264	.017	18
	19	1-	1-	1-	1-	1-	1-	1-	1-	.999	.988	.878	.642	.182	19
20	1	1	1	1	1	1	1	1	1	1	1	1	1	20	
25	0	.778	.277	.072	.004	0+	0+	0+	0+	0+	0+	0+	0+	0+	0
	1	.974	.642	.271	.027	.002	0+	0+	0+	0+	0+	0+	0+	0+	1
	2	.998	.873	.537	.098	.009	0+	0+	0+	0+	0+	0+	0+	0+	2
	3	1-	.966	.764	.234	.033	.002	0+	0+	0+	0+	0+	0+	0+	3
	4	1-	.993	.902	.421	.090	.009	0+	0+	0+	0+	0+	0+	0+	4
	5	1-	.999	.967	.617	.193	.029	.002	0+	0+	0+	0+	0+	0+	5
	6	1-	1-	.991	.780	.341	.074	.007	0+	0+	0+	0+	0+	0+	6
	7	1-	1-	.998	.891	.512	.154	.022	.001	0+	0+	0+	0+	0+	7
	8	1-	1-	1-	.953	.677	.274	.054	.004	0+	0+	0+	0+	0+	8
	9	1-	1-	1-	.983	.811	.425	.115	.013	0+	0+	0+	0+	0+	9
	10	1-	1-	1-	.994	.902	.586	.212	.034	.002	0+	0+	0+	0+	10
	11	1-	1-	1-	.998	.956	.732	.345	.078	.006	0+	0+	0+	0+	11
	12	1-	1-	1-	1-	.983	.846	.500	.154	.017	0+	0+	0+	0+	12
	13	1-	1-	1-	1-	.994	.922	.655	.268	.044	.002	0+	0+	0+	13
	14	1-	1-	1-	1-	.998	.966	.788	.414	.098	.006	0+	0+	0+	14
	15	1-	1-	1-	1-	1-	.987	.885	.575	.189	.017	0+	0+	0+	15
	16	1-	1-	1-	1-	1-	.996	.946	.726	.323	.047	0+	0+	0+	16
	17	1-	1-	1-	1-	1-	.999	.978	.846	.488	.109	.002	0+	0+	17
	18	1-	1-	1-	1-	1-	1-	.993	.926	.659	.220	.009	0+	0+	18
	19	1-	1-	1-	1-	1-	1-	.998	.971	.807	.383	.033	.001	0+	19
	20	1-	1-	1-	1-	1-	1-	1-	.991	.910	.579	.098	.007	0+	20
	21	1-	1-	1-	1-	1-	1-	1-	.998	.967	.766	.236	.034	0+	21
	22	1-	1-	1-	1-	1-	1-	1-	1-	.991	.902	.463	.127	.002	22
	23	1-	1-	1-	1-	1-	1-	1-	1-	.998	.973	.729	.358	.026	23
	24	1-	1-	1-	1-	1-	1-	1-	1-	1-	.996	.928	.723	.222	24
25	1	1	1	1	1	1	1	1	1	1	1	1	1	25	

B Tables

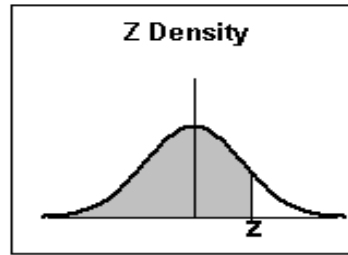
# trials	successes	Probability p of Success													
n	k	.01	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95	.99	k
30	0	.740	.215	.042	.001	0+	0+	0+	0+	0+	0+	0+	0+	0+	0
	1	.964	.554	.184	.011	0+	0+	0+	0+	0+	0+	0+	0+	0+	1
	2	.997	.812	.411	.044	.002	0+	0+	0+	0+	0+	0+	0+	0+	2
	3	1-	.939	.647	.123	.009	0+	0+	0+	0+	0+	0+	0+	0+	3
	4	1-	.984	.825	.255	.030	.002	0+	0+	0+	0+	0+	0+	0+	4
	5	1-	.997	.927	.428	.077	.006	0+	0+	0+	0+	0+	0+	0+	5
	6	1-	.999	.974	.607	.160	.017	.001	0+	0+	0+	0+	0+	0+	6
	7	1-	1-	.992	.761	.281	.044	.003	0+	0+	0+	0+	0+	0+	7
	8	1-	1-	.998	.871	.432	.094	.008	0+	0+	0+	0+	0+	0+	8
	9	1-	1-	1-	.939	.589	.176	.021	.001	0+	0+	0+	0+	0+	9
	10	1-	1-	1-	.974	.730	.291	.049	.003	0+	0+	0+	0+	0+	10
	11	1-	1-	1-	.991	.841	.431	.100	.008	0+	0+	0+	0+	0+	11
	12	1-	1-	1-	.997	.916	.578	.181	.021	.001	0+	0+	0+	0+	12
	13	1-	1-	1-	.999	.960	.715	.292	.048	.002	0+	0+	0+	0+	13
	14	1-	1-	1-	1-	.983	.825	.428	.097	.006	0+	0+	0+	0+	14
	15	1-	1-	1-	1-	.994	.903	.572	.175	.017	0+	0+	0+	0+	15
	16	1-	1-	1-	1-	.998	.952	.708	.285	.040	.001	0+	0+	0+	16
	17	1-	1-	1-	1-	.999	.979	.819	.422	.084	.003	0+	0+	0+	17
	18	1-	1-	1-	1-	1-	.992	.900	.569	.159	.009	0+	0+	0+	18
	19	1-	1-	1-	1-	1-	.997	.951	.709	.270	.026	0+	0+	0+	19
	20	1-	1-	1-	1-	1-	.999	.979	.824	.411	.061	0+	0+	0+	20
	21	1-	1-	1-	1-	1-	1-	.992	.906	.568	.129	.002	0+	0+	21
	22	1-	1-	1-	1-	1-	1-	.997	.956	.719	.239	.008	0+	0+	22
	23	1-	1-	1-	1-	1-	1-	.999	.983	.840	.393	.026	.001	0+	23
	24	1-	1-	1-	1-	1-	1-	.994	.923	.572	.073	.003	0+	0+	24
	25	1-	1-	1-	1-	1-	1-	.998	.970	.745	.175	.016	0+	0+	25
	26	1-	1-	1-	1-	1-	1-	1-	.991	.877	.353	.061	0+	0+	26
	27	1-	1-	1-	1-	1-	1-	1-	.998	.956	.589	.188	.003	0+	27
	28	1-	1-	1-	1-	1-	1-	1-	1-	.989	.816	.446	.036	0+	28
	29	1-	1-	1-	1-	1-	1-	1-	1-	.999	.958	.785	.260	0+	29
	30	1	1	1	1	1	1	1	1	1	1	1	1	1	30
		.01	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95	.99	

**B.3 Cumulative Standard Normal Probabilities**



Example:  $P(Z < 1.65) = .9505$

z	0	1	2	3	4	5	6	7	8	9	z
0.0	.5000	.5040	.5080	.5120	.5160	.5199	.5239	.5279	.5319	.5359	0.0
0.1	.5398	.5438	.5478	.5517	.5557	.5596	.5636	.5675	.5714	.5753	0.1
0.2	.5793	.5832	.5871	.5910	.5948	.5987	.6026	.6064	.6103	.6141	0.2
0.3	.6179	.6217	.6255	.6293	.6331	.6368	.6406	.6443	.6480	.6517	0.3
0.4	.6554	.6591	.6628	.6664	.6700	.6736	.6772	.6808	.6844	.6879	0.4
0.5	.6915	.6950	.6985	.7019	.7054	.7088	.7123	.7157	.7190	.7224	0.5
0.6	.7257	.7291	.7324	.7357	.7389	.7422	.7454	.7486	.7517	.7549	0.6
0.7	.7580	.7611	.7642	.7673	.7704	.7734	.7764	.7794	.7823	.7852	0.7
0.8	.7881	.7910	.7939	.7967	.7995	.8023	.8051	.8078	.8106	.8133	0.8
0.9	.8159	.8186	.8212	.8238	.8264	.8289	.8315	.8340	.8365	.8389	0.9
1.0	.8413	.8438	.8461	.8485	.8508	.8531	.8554	.8577	.8599	.8621	1.0
1.1	.8643	.8665	.8686	.8708	.8729	.8749	.8770	.8790	.8810	.8830	1.1
1.2	.8849	.8869	.8888	.8907	.8925	.8944	.8962	.8980	.8997	.9015	1.2
1.3	.9032	.9049	.9066	.9082	.9099	.9115	.9131	.9147	.9162	.9177	1.3
1.4	.9192	.9207	.9222	.9236	.9251	.9265	.9279	.9292	.9306	.9319	1.4
1.5	.9332	.9345	.9357	.9370	.9382	.9394	.9406	.9418	.9429	.9441	1.5
1.6	.9452	.9463	.9474	.9484	.9495	.9505	.9515	.9525	.9535	.9545	1.6
1.7	.9554	.9564	.9573	.9582	.9591	.9599	.9608	.9616	.9625	.9633	1.7
1.8	.9641	.9649	.9656	.9664	.9671	.9678	.9686	.9693	.9699	.9706	1.8
1.9	.9713	.9719	.9726	.9732	.9738	.9744	.9750	.9756	.9761	.9767	1.9
2.0	.9772	.9778	.9783	.9788	.9793	.9798	.9803	.9808	.9812	.9817	2.0
2.1	.9821	.9826	.9830	.9834	.9838	.9842	.9846	.9850	.9854	.9857	2.1
2.2	.9861	.9864	.9868	.9871	.9875	.9878	.9881	.9884	.9887	.9890	2.2
2.3	.9893	.9896	.9898	.9901	.9904	.9906	.9909	.9911	.9913	.9916	2.3
2.4	.9918	.9920	.9922	.9925	.9927	.9929	.9931	.9932	.9934	.9936	2.4
2.5	.9938	.9940	.9941	.9943	.9945	.9946	.9948	.9949	.9951	.9952	2.5
2.6	.9953	.9955	.9956	.9957	.9959	.9960	.9961	.9962	.9963	.9964	2.6
2.7	.9965	.9966	.9967	.9968	.9969	.9970	.9971	.9972	.9973	.9974	2.7
2.8	.9974	.9975	.9976	.9977	.9977	.9978	.9979	.9979	.9980	.9981	2.8
2.9	.9981	.9982	.9982	.9983	.9984	.9984	.9985	.9985	.9986	.9986	2.9
3.0	.9987	.9990	.9993	.9995	.9997	.9998	.9998	.9999	.9999	1.0000	3.0



z	0	1	2	3	4	5	6	7	8	9	z
-0.0	.5000	.4960	.4920	.4880	.4840	.4801	.4761	.4721	.4681	.4641	-0.0
-0.1	.4602	.4562	.4522	.4483	.4443	.4404	.4364	.4325	.4286	.4247	-0.1
-0.2	.4207	.4168	.4129	.4090	.4052	.4013	.3974	.3936	.3897	.3859	-0.2
-0.3	.3821	.3783	.3745	.3707	.3669	.3632	.3594	.3557	.3520	.3483	-0.3
-0.4	.3446	.3409	.3372	.3336	.3300	.3264	.3228	.3192	.3156	.3121	-0.4
-0.5	.3085	.3050	.3015	.2981	.2946	.2912	.2877	.2843	.2810	.2776	-0.5
-0.6	.2743	.2709	.2676	.2643	.2611	.2578	.2546	.2514	.2483	.2451	-0.6
-0.7	.2420	.2389	.2358	.2327	.2296	.2266	.2236	.2206	.2177	.2148	-0.7
-0.8	.2119	.2090	.2061	.2033	.2005	.1977	.1949	.1922	.1894	.1867	-0.8
-0.9	.1841	.1814	.1788	.1762	.1736	.1711	.1685	.1660	.1635	.1611	-0.9
-1.0	.1587	.1562	.1539	.1515	.1492	.1469	.1446	.1423	.1401	.1379	-1.0
-1.1	.1357	.1335	.1314	.1292	.1271	.1251	.1230	.1210	.1190	.1170	-1.1
-1.2	.1151	.1131	.1112	.1093	.1075	.1056	.1038	.1020	.1003	.0985	-1.2
-1.3	.0968	.0951	.0934	.0918	.0901	.0885	.0869	.0853	.0838	.0823	-1.3
-1.4	.0808	.0793	.0778	.0764	.0749	.0735	.0721	.0708	.0694	.0681	-1.4
-1.5	.0668	.0655	.0643	.0630	.0618	.0606	.0594	.0582	.0571	.0559	-1.5
-1.6	.0548	.0537	.0526	.0516	.0505	.0495	.0485	.0475	.0465	.0455	-1.6
-1.7	.0446	.0436	.0427	.0418	.0409	.0401	.0392	.0384	.0375	.0367	-1.7
-1.8	.0359	.0351	.0344	.0336	.0329	.0322	.0314	.0307	.0301	.0294	-1.8
-1.9	.0287	.0281	.0274	.0268	.0262	.0256	.0250	.0244	.0239	.0233	-1.9
-2.0	.0228	.0222	.0217	.0212	.0207	.0202	.0197	.0192	.0188	.0183	-2.0
-2.1	.0179	.0174	.0170	.0166	.0162	.0158	.0154	.0150	.0146	.0143	-2.1
-2.2	.0139	.0136	.0132	.0129	.0125	.0122	.0119	.0116	.0113	.0110	-2.2
-2.3	.0107	.0104	.0102	.0099	.0096	.0094	.0091	.0089	.0087	.0084	-2.3
-2.4	.0082	.0080	.0078	.0075	.0073	.0071	.0069	.0068	.0066	.0064	-2.4
-2.5	.0062	.0060	.0059	.0057	.0055	.0054	.0052	.0051	.0049	.0048	-2.5
-2.6	.0047	.0045	.0044	.0043	.0041	.0040	.0039	.0038	.0037	.0036	-2.6
-2.7	.0035	.0034	.0033	.0032	.0031	.0030	.0029	.0028	.0027	.0026	-2.7
-2.8	.0026	.0025	.0024	.0023	.0023	.0022	.0021	.0021	.0020	.0019	-2.8
-2.9	.0019	.0018	.0018	.0017	.0016	.0016	.0015	.0015	.0014	.0014	-2.9
-3.	.0013	.0010	.0007	.0005	.0003	.0002	.0002	.0001	.0001	.0000	-3.
	0	1	2	3	4	5	6	7	8	9	

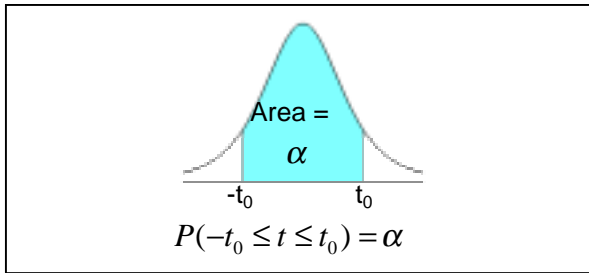
**B.4 Small Sample Exact 80% & 95% Confidence Intervals for p**

Example: If  $n = 20$  independent samples yielded  $k = 8$  successes, then the estimate of  $p$  is  $\hat{p} = 8/20 = .40$  and the 95% confidence interval is (.217, .606).

n →	10				20				30			
	80%		95%		80%		95%		80%		95%	
k	LCL	UCL	LCL	UCL	LCL	UCL	LCL	UCL	LCL	UCL	LCL	UCL
0	0.000	0.149	0.000	0.259	0.000	0.109	0.000	0.139	0.000	0.074	0.000	0.095
1	0.022	0.271	0.005	0.394	0.011	0.181	0.003	0.216	0.007	0.124	0.002	0.149
2	0.083	0.381	0.037	0.507	0.041	0.245	0.018	0.283	0.028	0.168	0.012	0.195
3	0.158	0.484	0.087	0.607	0.078	0.304	0.042	0.344	0.052	0.209	0.028	0.239
4	0.239	0.581	0.150	0.696	0.117	0.361	0.071	0.401	0.078	0.249	0.047	0.280
5	0.327	0.673	0.222	0.778	0.158	0.415	0.104	0.456	0.105	0.287	0.068	0.319
6	0.419	0.761	0.304	0.850	0.201	0.467	0.140	0.508	0.133	0.325	0.091	0.357
7	0.516	0.842	0.393	0.913	0.245	0.518	0.177	0.558	0.161	0.361	0.115	0.394
8	0.619	0.917	0.493	0.963	0.291	0.567	0.217	0.606	0.191	0.397	0.140	0.429
9	0.729	0.978	0.606	0.995	0.337	0.615	0.259	0.653	0.221	0.432	0.166	0.465
10	0.851	1.000	0.741	1.000	0.384	0.662	0.302	0.698	0.251	0.467	0.193	0.502
11					0.432	0.707	0.347	0.741	0.282	0.499	0.221	0.528
12					0.481	0.751	0.394	0.783	0.313	0.534	0.250	0.567
13					0.531	0.793	0.442	0.823	0.344	0.566	0.279	0.599
14					0.582	0.834	0.492	0.860	0.376	0.598	0.308	0.628
15					0.634	0.873	0.544	0.896	0.408	0.632	0.339	0.668
16					0.687	0.910	0.599	0.929	0.441	0.662	0.370	0.693
17					0.741	0.944	0.656	0.958	0.473	0.693	0.402	0.724
18					0.798	0.973	0.717	0.982	0.506	0.723	0.434	0.752
19					0.858	0.995	0.784	0.997	0.540	0.752	0.467	0.779
20					0.923	1.000	0.861	1.000	0.574	0.782	0.501	0.807
21									0.608	0.810	0.535	0.834
22									0.643	0.838	0.570	0.860
23									0.678	0.865	0.606	0.885
24									0.713	0.891	0.643	0.909
25									0.749	0.917	0.681	0.932
26									0.786	0.941	0.720	0.953
27									0.824	0.963	0.761	0.972
28									0.863	0.982	0.805	0.988
29									0.903	0.996	0.851	0.998
30									0.948	1.000	0.905	1.000



**B.5 Central Percentage Points  $t_0$  of Student's  $t$**



For a Student  $t$  with 10 degrees of freedom ( $f$ ) and  $\alpha = .98$  the value of  $t_0$  such that  $P(-t_0 \leq t \leq t_0) = \alpha$  is 2.76.

$f \backslash \alpha$	0.9	0.95	0.98	0.99
1	6.31	12.71	31.82	63.66
2	2.92	4.30	6.96	9.92
3	2.35	3.18	4.54	5.84
4	2.13	2.78	3.75	4.60
5	2.02	2.57	3.36	4.03
6	1.94	2.45	3.14	3.71
7	1.89	2.36	3.00	3.50
8	1.86	2.31	2.90	3.36
9	1.83	2.26	2.82	3.25
10	1.81	2.23	2.76	3.17
11	1.80	2.20	2.72	3.11
12	1.78	2.18	2.68	3.05
13	1.77	2.16	2.65	3.01
14	1.76	2.14	2.62	2.98
15	1.75	2.13	2.60	2.95
16	1.75	2.12	2.58	2.92
17	1.74	2.11	2.57	2.90
18	1.73	2.10	2.55	2.88
19	1.73	2.09	2.54	2.86
20	1.72	2.09	2.53	2.85
21	1.72	2.08	2.52	2.83
22	1.72	2.07	2.51	2.82
23	1.71	2.07	2.50	2.81
24	1.71	2.06	2.49	2.80
25	1.71	2.06	2.49	2.79
26	1.71	2.06	2.48	2.78
27	1.70	2.05	2.47	2.77
28	1.70	2.05	2.47	2.76
29	1.70	2.05	2.46	2.76
30	1.70	2.04	2.46	2.75

$f \backslash \alpha$	0.9	0.95	0.98	0.99
31	1.696	2.040	2.453	2.744
32	1.694	2.037	2.449	2.738
33	1.692	2.035	2.445	2.733
34	1.691	2.032	2.441	2.728
35	1.690	2.030	2.438	2.724
36	1.688	2.028	2.434	2.719
37	1.687	2.026	2.431	2.715
38	1.686	2.024	2.429	2.712
39	1.685	2.023	2.426	2.708
40	1.684	2.021	2.423	2.704
41	1.683	2.020	2.421	2.701
42	1.682	2.018	2.418	2.698
43	1.681	2.017	2.416	2.695
44	1.680	2.015	2.414	2.692
45	1.679	2.014	2.412	2.690
46	1.679	2.013	2.410	2.687
47	1.678	2.012	2.408	2.685
48	1.677	2.011	2.407	2.682
49	1.677	2.010	2.405	2.680
50	1.676	2.009	2.403	2.678
51	1.675	2.008	2.402	2.676
52	1.675	2.007	2.400	2.674
53	1.674	2.006	2.399	2.672
54	1.674	2.005	2.397	2.670
55	1.673	2.004	2.396	2.668
56	1.673	2.003	2.395	2.667
57	1.672	2.002	2.394	2.665
58	1.672	2.002	2.392	2.663
59	1.671	2.001	2.391	2.662
60	1.671	2.000	2.390	2.660
$\infty$	1.645	1.960	2.326	2.576