بسم الله الرحمن الرحيم

جامعة القدس المفتوحة

Statistical Tables

الجداول الإحصائية

اعداد

أ.يعقوب عبد الله أ. مراد أبو الهيجاء

عزيزي الطالب: تخدم هذه الجداول الاحصائية المقررات التاليه:

1- 1185 طرق الاحصاء بالحاسوب

2- 5263 الاحصاء التطبيقي

3- 5364 الاحتمالات

4- 5462 الاحصاء الرياضي

الفهرست:

جدول الأرقام العشوائية

69100	56077	13864	16681	13892	89337	65892	65909	49367	44893	35969	68561
92662	82203	28215	12941	49910	27736	83576	73742	93406	16083	48651	53846
38986	93287	36982	56546	10392	45802	90384	69078	47225	24636	17861	22834
24359	54126	97164	10516	97694	85661	77416	86392	36187	27303	17500	18341
44867	55868	50798	28885	33855	49278	94382	69554	10770	53445	76467	76450
91780	45078	57433	96891	75502	86239	31043	43857	23034	83096	62097	23610
66260	49701	42325	44357	55717	79097	64735	60539	59970	55748	35899	32660
33865	34050	69279	79430	58848	86516	30708	34898	79368	46747	10681	87582
10204	38426	43790	80663	62071	42916	51200	24600	61070	26775	59800	85243
38800	76810	74948	81953	58096	37502	96691	17873	48994	92345	62252	31732
38709	54753	58159	16607	81749	53973	66469	65831	43040	14449	40733	60985
26075	24101	14294	98760	22933	91302	44844	29710	22858	54004	64082	40915
49199	28090	84934	66729	30503	79895	44675	66565	96782	46270	26105	27939
14338	91608	20837	39800	69357	22637	25646	26681	49749	77403	45018	52845
24306	61557	14255	98094	76633	78749	62693	54502	10977	31464	75586	34786
36610	91039	59579	45980	82180	84491	70497	15020	34928	61145	42671	62468
46047	75777	46588	30108	28773	68661	64456	55409	55120	89946	12386	18758
92320	64694	18770	26578	27192	42554	16636	91568	23999	29670	68923	53627
85895	76471	40140	96663	44750	63820	61842	72314	52360	82286	94146	15562
17970	76738	92492	37535	61131	64356	70797	94443	97284	64281	42875	47885
47670	32957	47621	18463	18869	56982	41924	47758	84352	33052	85065	60354
14065	60535	48909	59955	41591	84382	56068	83925	35536	69810	31980	97863
76700	81995	49046	91469	14066	84391	89298	17279	28857	19730	84930	60910
18385	76831	86415	10635	42572	90443	31044	14450	24385	46422	95095	14225
24558	68383	76506	72731	50542	95190	41642	50464	76250	10283	17200	71906
60705	11884	83404	58547	24556	35305	23919	14206	50923	89656	27393	34521
24775	93031	56073	89034	46095	61508	11395	24382	65887	72365	99572	51787
69715	36311	68526	61780	69083	95995	60198	71050	17611	78918	88124	88526
10057	33330	49675	97810	85724	20118	27766	39884	44148	96320	74121	25315
52660	39083	82406	43577	39441	73420	66410	79811	89025	92700	62800	57924
94757	64604	29863	57773	68318	55387	56260	34850	24531	21900	28977	74853
52302	88141	81963	62153	37246	48478	35950	16012	52699	15905	52876	69818
24708	34751	89388	37519	42417	47619	65486	54193	85413	46343	14006	54333
49008	65396	84548	80283	38509	35984	11797	88578	35196	43382	78100	38479
64220	41520	61517	56943	88076	44579	77197	67668	73608	11353	58370	56190
14594	90968	22190	89240	80274	48611	95273	14970	12774	64177	80516	43571
84125	67150	58054	35022	21582	47864	68910	15208	88312	89647	66539	69390
13699	71647	85222	47780	48303	88627	29586	11533	85259	96131	63687	10795
51734	90725	57492	58761	26329	56870	49024	27693	19136	76156	46670	78616
82114	91390	94626	17865	48696	45963	72837	93825	55073	48880	34681	77523
55778	79893	50230	25436	14747	85730	97781	36163	12970	39600	33099	94475
85085	67928	41208	10848	22551	28872	98310	73680	97750	63415	34711	84587
40504	59745	88318	63307	68252	42032	17315	98574	60597	49380	44939	30990
24824	16502	66230	48871	79529	40990	10203	81003	60221	17979	84748	24782
70811	17021	31100	80281	46295	86025	11593	86741	11164	67085	21322	86754
36685	52548	63985	91700	25564	45800	85195	85781	85673	34192	14299	92470
87456	75125	31358	76357	86061	72087	12030	51848	17181	67823	80385	33146
17297	56780	89061	95823	11714	82578	15320	32196	68284	36154	92303	82802
39742	51648	95482	74727	34958	78957	21031	76926	68920	68055	46315	26414
87551	61975	76410	97264	74043	14912	46155	11994	68998	97280	45590	55132
95562	35386	56053	40454	46993	35853	79270	61144	95700	79327	55826	77685
78785	21328	86619	68740	14308	26175	29900	86561	59554	82749	73591	87842
21453	22789	83151	56669	24064	32721	33158	75902	81989	20163	44595	60855
50030	84368	34234	96919	77020	85334	92725	88486	84384	11081	49200	68750
84720	92641	99537	23490	35403	96984	14877	89462	92801	81331	29760	91620
79820	87363	89337	86050	65804	42500	94040	14006	87126	52724	29373	26236
70285	29396	26386	17571	43827	31578	73759	77204	89705	10497	58045	20263

الاحتمالات التراكمية لتوزيع ذات الحدين

P		0.05	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	0.95
n=1	0	0.950	0.900	0.800	0.700	0.600	0.500	0.400	0.300	0.200	0.100	0.050
	1	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
n=2	0	0.903	0.810	0.640	0.490	0.360	0.250	0.160	0.090	0.040	0.010	0.003
	1	0.997	0.990	0.960	0.910	0.840	0.750	0.640	0.510	0.360	0.190	0.098
	2	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
n=3	0	0.857	0.729	0.512	0.343	0.216	0.125	0.064	0.027	0.008	0.001	0.000
	1	0.993	0.972	0.896	0.784	0.648	0.500	0.352	0.216	0.104	0.028	0.007
	2	1.000	0.999	0.992	0.973	0.936	0.875	0.784	0.657	0.488	0.271	0.143
	3	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
n=4	0	0.815	0.656	0.410	0.240	0.130	0.063	0.026	0.008	0.002	0.000	0.000
	1	0.986	0.948	0.819	0.652	0.475	0.313	0.179	0.084	0.027	0.004	0.000
	2	1.000	0.996	0.973	0.916	0.821	0.688	0.525	0.348	0.181	0.052	0.014
	3	1.000	1.000	0.998	0.992	0.974	0.938	0.870	0.760	0.590	0.344	0.185
	4	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
n=5	0	0.774	0.590	0.328	0.168	0.078	0.031	0.010	0.002	0.000	0.000	0.000
	1	0.977	0.919	0.737	0.528	0.337	0.188	0.087	0.031	0.007	0.000	0.000
	2	0.999	0.991	0.942	0.837	0.683	0.500	0.317	0.163	0.058	0.009	0.001
	3	1.000	1.000	0.993	0.969	0.913	0.813	0.663	0.472	0.263	0.081	0.023
	4	1.000	1.000	1.000	0.998	0.990	0.969	0.922	0.832	0.672	0.410	0.226
	5	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
n=6	0	0.735	0.531	0.262	0.118	0.047	0.016	0.004	0.001	0.000	0.000	0.000
	1	0.967	0.886	0.655	0.420	0.233	0.109	0.041	0.011	0.002	0.000	0.000
	2	0.998	0.984	0.901	0.744	0.544	0.344	0.179	0.070	0.017	0.001	0.000
	3	1.000	0.999	0.983	0.930	0.821	0.656	0.456	0.256	0.099	0.016	0.002
	4	1.000	1.000	0.998	0.989	0.959	0.891	0.767	0.580	0.345	0.114	0.033
	5	1.000	1.000	1.000	0.999	0.996	0.984	0.953	0.882	0.738	0.469	0.265
	6	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
n=7	0	0.698	0.478	0.210	0.082	0.028	0.008	0.002	0.000	0.000	0.000	0.000
	1	0.956	0.850	0.577	0.329	0.159	0.062	0.019	0.004	0.000	0.000	0.000
	2	0.996	0.974	0.852	0.647	0.420	0.227	0.096	0.029	0.005	0.000	0.000
	3	1.000	0.997	0.967	0.874	0.710	0.500	0.290	0.126	0.033	0.003	0.000
	4	1.000	1.000	0.995	0.971	0.904	0.773	0.580	0.353	0.148	0.026	0.004
	5	1.000	1.000	1.000	0.996	0.981	0.937	0.841	0.671	0.423	0.150	0.044
	6	1.000	1.000	1.000	1.000	0.998	0.992	0.972	0.918	0.790	0.522	0.302
	7	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

الاحتمالات التراكمية لتوزيع ذات الحدين

P		0.05	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	0.95
n=8	0	0.663	0.430	0.168	0.058	0.017	0.004	0.001	0.000	0.000	0.000	0.000
	1	0.943	0.813	0.503	0.255	0.106	0.035	0.009	0.001	0.000	0.000	0.000
	2	0.994	0.962	0.797	0.552	0.315	0.145	0.050	0.011	0.001	0.000	0.000
	3	1.000	0.995	0.944	0.806	0.594	0.363	0.174	0.058	0.010	0.000	0.000
	4	1.000	1.000	0.990	0.942	0.826	0.637	0.406	0.194	0.056	0.005	0.000
	5	1.000	1.000	0.999	0.989	0.950	0.855	0.685	0.448	0.203	0.038	0.006
	6	1.000	1.000	1.000	0.999	0.991	0.965	0.894	0.745	0.497	0.187	0.057
	7	1.000	1.000	1.000	1.000	0.999	0.996	0.983	0.942	0.832	0.570	0.337
	8	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
n=9	0	0.630	0.387	0.134	0.040	0.010	0.002	0.000	0.000	0.000	0.000	0.000
	1	0.929	0.775	0.436	0.196	0.071	0.020	0.004	0.000	0.000	0.000	0.000
	2	0.992	0.947	0.738	0.463	0.232	0.090	0.025	0.004	0.000	0.000	0.000
	3	0.999	0.992	0.914	0.730	0.483	0.254	0.099	0.025	0.003	0.000	0.000
	4	1.000	0.999	0.980	0.901	0.733	0.500	0.267	0.099	0.020	0.001	0.000
	5	1.000	1.000	0.997	0.975	0.901	0.746	0.517	0.270	0.086	0.008	0.001
	6	1.000	1.000	1.000	0.996	0.975	0.910	0.768	0.537	0.262	0.053	0.008
	7	1.000	1.000	1.000	1.000	0.996	0.980	0.929	0.804	0.564	0.225	0.071
	8	1.000	1.000	1.000	1.000	1.000	0.998	0.990	0.960	0.866	0.613	0.370
	9	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
n=10	0	0.599	0.349	0.107	0.028	0.006	0.001	0.000	0.000	0.000	0.000	0.000
	1	0.914	0.736	0.376	0.149	0.046	0.011	0.002	0.000	0.000	0.000	0.000
	2	0.988	0.930	0.678	0.383	0.167	0.055	0.012	0.002	0.000	0.000	0.000
	3	0.999	0.987	0.879	0.650	0.382	0.172	0.055	0.011	0.001	0.000	0.000
	4	1.000	0.998	0.967	0.850	0.633	0.377	0.166	0.047	0.006	0.000	0.000
	5	1.000	1.000	0.994	0.953	0.834	0.623	0.367	0.150	0.033	0.002	0.000
	6	1.000	1.000	0.999	0.989	0.945	0.828	0.618	0.350	0.121	0.013	0.001
	7	1.000	1.000	1.000	0.998	0.988	0.945	0.833	0.617	0.322	0.070	0.012
	8	1.000	1.000	1.000	1.000	0.998	0.989	0.954	0.851	0.624	0.264	0.086
	9	1.000	1.000	1.000	1.000	1.000	0.999	0.994	0.972	0.893	0.651	0.401
	10	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
n=11	0	0.569	0.314	0.086	0.020	0.004	0.000	0.000	0.000	0.000	0.000	0.000
	1	0.898	0.697	0.322	0.113	0.030	0.006	0.001	0.000	0.000	0.000	0.000
	2	0.985	0.910	0.617	0.313	0.119	0.033	0.006	0.001	0.000	0.000	0.000
	3	0.998	0.981	0.839	0.570	0.296	0.113	0.029	0.004	0.000	0.000	0.000
	4	1.000	0.997	0.950	0.790	0.533	0.274	0.099	0.022	0.002	0.000	0.000
	5	1.000	1.000	0.988	0.922	0.753	0.500	0.247	0.078	0.012	0.000	0.000
	6	1.000	1.000	0.998	0.978	0.901	0.726	0.467	0.210	0.050	0.003	0.000
	7	1.000	1.000	1.000	0.996	0.971	0.887	0.704	0.430	0.161	0.019	0.002
	8	1.000	1.000	1.000	0.999	0.994	0.967	0.881	0.687	0.383	0.090	0.015
	9	1.000	1.000	1.000	1.000	0.999	0.994	0.970	0.887	0.678	0.303	0.102
	10	1.000	1.000	1.000	1.000	1.000	1.000	0.996	0.980	0.914	0.686	0.431
	11	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

الاحتمالات التراكمية لتوزيع ذات الحدين

P		0.05	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	0.95
n=12	0	0.540	0.282	0.069	0.014	0.002	0.000	0.000	0.000	0.000	0.000	0.000
	1	0.882	0.659	0.275	0.085	0.020	0.003	0.000	0.000	0.000	0.000	0.000
	2	0.980	0.889	0.558	0.253	0.083	0.019	0.003	0.000	0.000	0.000	0.000
	3	0.998	0.974	0.795	0.493	0.225	0.073	0.015	0.002	0.000	0.000	0.000
	4	1.000	0.996	0.927	0.724	0.438	0.194	0.057	0.009	0.001	0.000	0.000
	5	1.000	0.999	0.981	0.882	0.665	0.387	0.158	0.039	0.004	0.000	0.000
	6	1.000	1.000	0.996	0.961	0.842	0.613	0.335	0.118	0.019	0.001	0.000
	7	1.000	1.000	0.999	0.991	0.943	0.806	0.562	0.276	0.073	0.004	0.000
	8	1.000	1.000	1.000	0.998	0.985	0.927	0.775	0.507	0.205	0.026	0.002
	9	1.000	1.000	1.000	1.000	0.997	0.981	0.917	0.747	0.442	0.111	0.020
	10	1.000	1.000	1.000	1.000	1.000	0.997	0.980	0.915	0.725	0.341	0.118
	11	1.000	1.000	1.000	1.000	1.000	1.000	0.998	0.986	0.931	0.718	0.460
	12	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
n=13	0	0.513	0.254	0.055	0.010	0.001	0.000	0.000	0.000	0.000	0.000	0.000
	1	0.865	0.621	0.234	0.064	0.013	0.002	0.000	0.000	0.000	0.000	0.000
	2	0.975	0.866	0.502	0.202	0.058	0.011	0.001	0.000	0.000	0.000	0.000
	3	0.997	0.966	0.747	0.421	0.169	0.046	0.008	0.001	0.000	0.000	0.000
	4	1.000	0.994	0.901	0.654	0.353	0.133	0.032	0.004	0.000	0.000	0.000
	5	1.000	0.999	0.970	0.835	0.574	0.291	0.098	0.018	0.001	0.000	0.000
	6	1.000	1.000	0.993	0.938	0.771	0.500	0.229	0.062	0.007	0.000	0.000
	7	1.000	1.000	0.999	0.982	0.902	0.709	0.426	0.165	0.030	0.001	0.000
	8	1.000	1.000	1.000	0.996	0.968	0.867	0.647	0.346	0.099	0.006	0.000
	9	1.000	1.000	1.000	0.999	0.992	0.954	0.831	0.579	0.253	0.034	0.003
	10	1.000	1.000	1.000	1.000	0.999	0.989	0.942	0.798	0.498	0.134	0.025
	11	1.000	1.000	1.000	1.000	1.000	0.998	0.987	0.936	0.766	0.379	0.135
	12	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.990	0.945	0.746	0.487
	13	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
n=14	0	0.488	0.229	0.044	0.007	0.001	0.000	0.000	0.000	0.000	0.000	0.000
	1	0.847	0.585	0.198	0.047	0.008	0.001	0.000	0.000	0.000	0.000	0.000
	2	0.970	0.842	0.448	0.161	0.040	0.006	0.001	0.000	0.000	0.000	0.000
	3	0.996	0.956	0.698	0.355	0.124	0.029	0.004	0.000	0.000	0.000	0.000
	4	1.000	0.991	0.870	0.584	0.279	0.090	0.018	0.002	0.000	0.000	0.000
	5	1.000	0.999	0.956	0.781	0.486	0.212	0.058	0.008	0.000	0.000	0.000
	6	1.000	1.000	0.988	0.907	0.692	0.395	0.150	0.031	0.002	0.000	0.000
	7	1.000	1.000	0.998	0.969	0.850	0.605	0.308	0.093	0.012	0.000	0.000
	8	1.000	1.000	1.000	0.992	0.942	0.788	0.514	0.219	0.044	0.001	0.000
	9	1.000	1.000	1.000	0.998	0.982	0.910	0.721	0.416	0.130	0.009	0.000
	10	1.000	1.000	1.000	1.000	0.996	0.971	0.876	0.645	0.302	0.044	0.004
	11	1.000	1.000	1.000	1.000	0.999	0.994	0.960	0.839	0.552	0.158	0.030
	12	1.000	1.000	1.000	1.000	1.000	0.999	0.992	0.953	0.802	0.415	0.153
	13	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.993	0.956	0.771	0.512
	14	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

الاحتمالات التراكمية لتوزيع ذات الحدين

P		0.05	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	0.95
n=15	0	0.463	0.206	0.035	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	1	0.829	0.549	0.167	0.035	0.005	0.000	0.000	0.000	0.000	0.000	0.000
	2	0.964	0.816	0.398	0.127	0.027	0.004	0.000	0.000	0.000	0.000	0.000
	3	0.995	0.944	0.648	0.297	0.091	0.018	0.002	0.000	0.000	0.000	0.000
	4	0.999	0.987	0.836	0.515	0.217	0.059	0.009	0.001	0.000	0.000	0.000
	5	1.000	0.998	0.939	0.722	0.403	0.151	0.034	0.004	0.000	0.000	0.000
	6	1.000	1.000	0.982	0.869	0.610	0.304	0.095	0.015	0.001	0.000	0.000
	7	1.000	1.000	0.996	0.950	0.787	0.500	0.213	0.050	0.004	0.000	0.000
	8	1.000	1.000	0.999	0.985	0.905	0.696	0.390	0.131	0.018	0.000	0.000
	9	1.000	1.000	1.000	0.996	0.966	0.849	0.597	0.278	0.061	0.002	0.000
	10	1.000	1.000	1.000	0.999	0.991	0.941	0.783	0.485	0.164	0.013	0.001
	11	1.000	1.000	1.000	1.000	0.998	0.982	0.909	0.703	0.352	0.056	0.005
	12	1.000	1.000	1.000	1.000	1.000	0.996	0.973	0.873	0.602	0.184	0.036
	13	1.000	1.000	1.000	1.000	1.000	1.000	0.995	0.965	0.833	0.451	0.171
	14	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.995	0.965	0.794	0.537
	15	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
n=16	0	0.440	0.185	0.028	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	1	0.811	0.515	0.141	0.026	0.003	0.000	0.000	0.000	0.000	0.000	0.000
	2	0.957	0.789	0.352	0.099	0.018	0.002	0.000	0.000	0.000	0.000	0.000
	3	0.993	0.932	0.598	0.246	0.065	0.011	0.001	0.000	0.000	0.000	0.000
	4	0.999	0.983	0.798	0.450	0.167	0.038	0.005	0.000	0.000	0.000	0.000
	5	1.000	0.997	0.918	0.660	0.329	0.105	0.019	0.002	0.000	0.000	0.000
	6	1.000	0.999	0.973	0.825	0.527	0.227	0.058	0.007	0.000	0.000	0.000
	7	1.000	1.000	0.993	0.926	0.716	0.402	0.142	0.026	0.001	0.000	0.000
	8	1.000	1.000	0.999	0.974	0.858	0.598	0.284	0.074	0.007	0.000	0.000
	9	1.000	1.000	1.000	0.993	0.942	0.773	0.473	0.175	0.027	0.001	0.000
	10	1.000	1.000	1.000	0.998	0.981	0.895	0.671	0.340	0.082	0.003	0.000
	11	1.000	1.000	1.000	1.000	0.995	0.962	0.833	0.550	0.202	0.017	0.001
	12	1.000	1.000	1.000	1.000	0.999	0.989	0.935	0.754	0.402	0.068	0.007
	13	1.000	1.000	1.000	1.000	1.000	0.998	0.982	0.901	0.648	0.211	0.043
	14	1.000	1.000	1.000	1.000	1.000	1.000	0.997	0.974	0.859	0.485	0.189
	15	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.997	0.972	0.815	0.560
	16	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
n=17	0	0.418	0.167	0.023	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	1	0.792	0.482	0.118	0.019	0.002	0.000	0.000	0.000	0.000	0.000	0.000
	2	0.950	0.762	0.310	0.077	0.012	0.001	0.000	0.000	0.000	0.000	0.000
	3	0.991	0.917	0.549	0.202	0.046	0.006	0.000	0.000	0.000	0.000	0.000
	4	0.999	0.978	0.758	0.389	0.126	0.025	0.003	0.000	0.000	0.000	0.000
	5	1.000	0.995	0.894	0.597	0.264	0.072	0.011	0.001	0.000	0.000	0.000
	6	1.000	0.999	0.962	0.775	0.448	0.166	0.035	0.003	0.000	0.000	0.000

الاحتمالات التراكمية لتوزيع ذات الحدين

يتبع		0.05	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	0.95
n=17	7	1.000	1.000	0.989	0.895	0.641	0.315	0.092	0.013	0.000	0.000	0.000
	8	1.000	1.000	0.997	0.960	0.801	0.500	0.199	0.040	0.003	0.000	0.000
	9	1.000	1.000	1.000	0.987	0.908	0.685	0.359	0.105	0.011	0.000	0.000
	10	1.000	1.000	1.000	0.997	0.965	0.834	0.552	0.225	0.038	0.001	0.000
	11	1.000	1.000	1.000	0.999	0.989	0.928	0.736	0.403	0.106	0.005	0.000
	12	1.000	1.000	1.000	1.000	0.997	0.975	0.874	0.611	0.242	0.022	0.001
	13	1.000	1.000	1.000	1.000	1.000	0.994	0.954	0.798	0.451	0.083	0.009
	14	1.000	1.000	1.000	1.000	1.000	0.999	0.988	0.923	0.690	0.238	0.050
	15	1.000	1.000	1.000	1.000	1.000	1.000	0.998	0.981	0.882	0.518	0.208
	16	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.998	0.977	0.833	0.582
	17	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
n=18	0	0.397	0.150	0.018	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	1	0.774	0.450	0.099	0.014	0.001	0.000	0.000	0.000	0.000	0.000	0.000
	2	0.942	0.734	0.271	0.060	0.008	0.001	0.000	0.000	0.000	0.000	0.000
	3	0.989	0.902	0.501	0.165	0.033	0.004	0.000	0.000	0.000	0.000	0.000
	4	0.998	0.972	0.716	0.333	0.094	0.015	0.001	0.000	0.000	0.000	0.000
	5	1.000	0.994	0.867	0.534	0.209	0.048	0.006	0.000	0.000	0.000	0.000
	6	1.000	0.999	0.949	0.722	0.374	0.119	0.020	0.001	0.000	0.000	0.000
	7	1.000	1.000	0.984	0.859	0.563	0.240	0.058	0.006	0.000	0.000	0.000
	8	1.000	1.000	0.996	0.940	0.737	0.407	0.135	0.021	0.001	0.000	0.000
	9	1.000	1.000	0.999	0.979	0.865	0.593	0.263	0.060	0.004	0.000	0.000
	10	1.000	1.000	1.000	0.994	0.942	0.760	0.437	0.141	0.016	0.000	0.000
	11	1.000	1.000	1.000	0.999	0.980	0.881	0.626	0.278	0.051	0.001	0.000
	12	1.000	1.000	1.000	1.000	0.994	0.952	0.791	0.466	0.133	0.006	0.000
	13	1.000	1.000	1.000	1.000	0.999	0.985	0.906	0.667	0.284	0.028	0.002
	14	1.000	1.000	1.000	1.000	1.000	0.996	0.967	0.835	0.499	0.098	0.011
	15	1.000	1.000	1.000	1.000	1.000	0.999	0.992	0.940	0.729	0.266	0.058
	16	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.986	0.901	0.550	0.226
	17	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.998	0.982	0.850	0.603
	18	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
n=19	0	0.377	0.135	0.014	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	1	0.755	0.420	0.083	0.010	0.001	0.000	0.000	0.000	0.000	0.000	0.000
	2	0.933	0.705	0.237	0.046	0.005	0.000	0.000	0.000	0.000	0.000	0.000
	3	0.987	0.885	0.455	0.133	0.023	0.002	0.000	0.000	0.000	0.000	0.000
	4	0.998	0.965	0.673	0.282	0.070	0.010	0.001	0.000	0.000	0.000	0.000
	5	1.000	0.991	0.837	0.474	0.163	0.032	0.003	0.000	0.000	0.000	0.000
	6	1.000	0.998	0.932	0.666	0.308	0.084	0.012	0.001	0.000	0.000	0.000
	7	1.000	1.000	0.977	0.818	0.488	0.180	0.035	0.003	0.000	0.000	0.000
	8	1.000	1.000	0.993	0.916	0.667	0.324	0.088	0.011	0.000	0.000	0.000
	9	1.000	1.000	0.998	0.967	0.814	0.500	0.186	0.033	0.002	0.000	0.000

الاحتمالات التراكمية لتوزيع ذات الحدين

يتبع		0.05	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	0.95
n=19												
	10	1.000	1.000	1.000	0.989	0.912	0.676	0.333	0.084	0.007	0.000	0.000
	11	1.000	1.000	1.000	0.997	0.965	0.820	0.512	0.182	0.023	0.000	0.000
	12	1.000	1.000	1.000	0.999	0.988	0.916	0.692	0.334	0.068	0.002	0.000
	13	1.000	1.000	1.000	1.000	0.997	0.968	0.837	0.526	0.163	0.009	0.000
	14	1.000	1.000	1.000	1.000	0.999	0.990	0.930	0.718	0.327	0.035	0.002
	15	1.000	1.000	1.000	1.000	1.000	0.998	0.977	0.867	0.545	0.115	0.013
	16	1.000	1.000	1.000	1.000	1.000	1.000	0.995	0.954	0.763	0.295	0.067
	17	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.990	0.917	0.580	0.245
	18	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.986	0.865	0.623
	19	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
n=20	0	0.358	0.122	0.012	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	1	0.736	0.392	0.069	0.008	0.001	0.000	0.000	0.000	0.000	0.000	0.000
	2	0.925	0.677	0.206	0.035	0.004	0.000	0.000	0.000	0.000	0.000	0.000
	3	0.984	0.867	0.411	0.107	0.016	0.001	0.000	0.000	0.000	0.000	0.000
	4	0.997	0.957	0.630	0.238	0.051	0.006	0.000	0.000	0.000	0.000	0.000
	5	1.000	0.989	0.804	0.416	0.126	0.021	0.002	0.000	0.000	0.000	0.000
	6	1.000	0.998	0.913	0.608	0.250	0.058	0.006	0.000	0.000	0.000	0.000
	7	1.000	1.000	0.968	0.772	0.416	0.132	0.021	0.001	0.000	0.000	0.000
	8	1.000	1.000	0.990	0.887	0.596	0.252	0.057	0.005	0.000	0.000	0.000
	9	1.000	1.000	0.997	0.952	0.755	0.412	0.128	0.017	0.001	0.000	0.000
	10	1.000	1.000	0.999	0.983	0.872	0.588	0.245	0.048	0.003	0.000	0.000
	11	1.000	1.000	1.000	0.995	0.943	0.748	0.404	0.113	0.010	0.000	0.000
	12	1.000	1.000	1.000	0.999	0.979	0.868	0.584	0.228	0.032	0.000	0.000
	13	1.000	1.000	1.000	1.000	0.994	0.942	0.750	0.392	0.087	0.002	0.000
	14	1.000	1.000	1.000	1.000	0.998	0.979	0.874	0.584	0.196	0.011	0.000
	15	1.000	1.000	1.000	1.000	1.000	0.994	0.949	0.762	0.370	0.043	0.003
	16	1.000	1.000	1.000	1.000	1.000	0.999	0.984	0.893	0.589	0.133	0.016
	17	1.000	1.000	1.000	1.000	1.000	1.000	0.996	0.965	0.794	0.323	0.075
	18	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.992	0.931	0.608	0.264
	19	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.988	0.878	0.642
	20	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

الاحتمالات التراكمية لتوزيع بواسون

μ

x	0.01	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0	0.995	0.990	0.980	0.970	0.961	0.951	0.942	0.932	0.923	0.914
1	1.000	1.000	1.000	1.000	0.999	0.999	0.998	0.998	0.997	0.996
2	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

μ

x	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
0	0.905	0.819	0.741	0.670	0.607	0.549	0.497	0.449	0.407	0.368
1	0.995	0.983	0.963	0.938	0.910	0.878	0.844	0.809	0.773	0.736
2	1.000	0.999	0.996	0.992	0.986	0.977	0.966	0.953	0.937	0.920
3	1.000	1.000	1.000	0.999	0.998	0.997	0.994	0.991	0.987	0.981
4	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.999	0.998	0.996
5	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999
6	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

μ

x	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2
0	0.333	0.301	0.273	0.247	0.223	0.202	0.183	0.165	0.150	0.135
1	0.699	0.663	0.627	0.592	0.558	0.525	0.493	0.463	0.434	0.406
2	0.900	0.880	0.857	0.834	0.809	0.783	0.757	0.731	0.704	0.677
3	0.974	0.966	0.957	0.946	0.934	0.921	0.907	0.891	0.875	0.857
4	0.995	0.992	0.989	0.986	0.981	0.976	0.970	0.964	0.956	0.947
5	0.999	0.999	0.998	0.997	0.996	0.994	0.992	0.990	0.987	0.983
6	1.000	1.000	1.000	0.999	0.999	0.999	0.998	0.997	0.997	0.996
7	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.999	0.999
8	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

μ

x	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3
0	0.123	0.111	0.100	0.091	0.082	0.074	0.067	0.061	0.055	0.050
1	0.380	0.355	0.331	0.308	0.287	0.267	0.249	0.231	0.215	0.199
2	0.650	0.623	0.596	0.570	0.544	0.518	0.494	0.470	0.446	0.423
3	0.839	0.819	0.799	0.779	0.758	0.736	0.714	0.692	0.670	0.647
4	0.938	0.928	0.916	0.904	0.891	0.877	0.863	0.848	0.832	0.815
5	0.980	0.975	0.970	0.964	0.958	0.951	0.943	0.935	0.926	0.916
6	0.994	0.993	0.991	0.988	0.986	0.983	0.979	0.976	0.971	0.967
7	0.999	0.998	0.997	0.997	0.996	0.995	0.993	0.992	0.990	0.988
8	1.000	1.000	0.999	0.999	0.999	0.999	0.998	0.998	0.997	0.996
9	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.999	0.999
10	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

الاحتمالات التراكمية لتوزيع بواسون

μ

x	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4
0	0.045	0.041	0.037	0.033	0.030	0.027	0.025	0.022	0.020	0.018
1	0.185	0.171	0.159	0.147	0.136	0.126	0.116	0.107	0.099	0.092
2	0.401	0.380	0.359	0.340	0.321	0.303	0.285	0.269	0.253	0.238
3	0.625	0.603	0.580	0.558	0.537	0.515	0.494	0.474	0.453	0.434
4	0.798	0.781	0.763	0.744	0.725	0.706	0.687	0.668	0.648	0.629
5	0.906	0.895	0.883	0.871	0.858	0.844	0.830	0.816	0.801	0.785
6	0.961	0.955	0.949	0.942	0.935	0.927	0.918	0.909	0.900	0.889
7	0.986	0.983	0.980	0.977	0.973	0.969	0.965	0.960	0.955	0.949
8	0.995	0.994	0.993	0.992	0.990	0.988	0.986	0.984	0.982	0.979
9	0.999	0.998	0.998	0.997	0.997	0.996	0.995	0.994	0.993	0.992
10	1.000	1.000	0.999	0.999	0.999	0.999	0.998	0.998	0.998	0.997
11	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.999	0.999
12	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

μ

x	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5
0	0.017	0.015	0.014	0.012	0.011	0.010	0.009	0.008	0.007	0.007
1	0.085	0.078	0.072	0.066	0.061	0.056	0.052	0.048	0.044	0.040
2	0.224	0.210	0.197	0.185	0.174	0.163	0.152	0.143	0.133	0.125
3	0.414	0.395	0.377	0.359	0.342	0.326	0.310	0.294	0.279	0.265
4	0.609	0.590	0.570	0.551	0.532	0.513	0.495	0.476	0.458	0.441
5	0.769	0.753	0.737	0.720	0.703	0.686	0.668	0.651	0.634	0.616
6	0.879	0.868	0.856	0.844	0.831	0.818	0.805	0.791	0.777	0.762
7	0.943	0.936	0.929	0.921	0.913	0.905	0.896	0.887	0.877	0.867
8	0.976	0.972	0.968	0.964	0.960	0.955	0.950	0.944	0.938	0.932
9	0.991	0.989	0.987	0.985	0.983	0.981	0.978	0.975	0.972	0.968
10	0.997	0.996	0.995	0.994	0.993	0.992	0.991	0.990	0.988	0.986
11	0.999	0.999	0.998	0.998	0.998	0.997	0.997	0.996	0.995	0.995
12	1.000	1.000	1.000	0.999	0.999	0.999	0.999	0.999	0.998	0.998
13	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.999
14	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

الاحتمالات التراكمية لتوزيع بواسون

μ

x	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6
0	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.003	0.003
1	0.037	0.034	0.031	0.029	0.027	0.024	0.022	0.021	0.019	0.017
2	0.117	0.109	0.102	0.095	0.088	0.082	0.077	0.072	0.067	0.062
3	0.251	0.238	0.225	0.213	0.202	0.191	0.180	0.170	0.160	0.151
4	0.423	0.406	0.390	0.373	0.358	0.342	0.327	0.313	0.299	0.285
5	0.598	0.581	0.564	0.546	0.529	0.512	0.495	0.478	0.462	0.446
6	0.747	0.732	0.717	0.702	0.686	0.670	0.654	0.638	0.622	0.606
7	0.856	0.845	0.834	0.822	0.810	0.797	0.784	0.771	0.758	0.744
8	0.925	0.918	0.911	0.903	0.894	0.886	0.877	0.867	0.857	0.847
9	0.964	0.960	0.956	0.951	0.946	0.941	0.935	0.929	0.923	0.916
10	0.984	0.982	0.980	0.978	0.975	0.972	0.969	0.965	0.961	0.957
11	0.994	0.993	0.992	0.990	0.989	0.988	0.986	0.984	0.982	0.980
12	0.998	0.997	0.997	0.996	0.996	0.995	0.994	0.993	0.992	0.991
13	0.999	0.999	0.999	0.999	0.998	0.998	0.998	0.997	0.997	0.996
14	1.000	1.000	1.000	1.000	0.999	0.999	0.999	0.999	0.999	0.999
15	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
16	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
17	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
18	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

μ

x	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7
0	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001
1	0.016	0.015	0.013	0.012	0.011	0.010	0.010	0.009	0.008	0.007
2	0.058	0.054	0.050	0.046	0.043	0.040	0.037	0.034	0.032	0.030
3	0.143	0.134	0.126	0.119	0.112	0.105	0.099	0.093	0.087	0.082
4	0.272	0.259	0.247	0.235	0.224	0.213	0.202	0.192	0.182	0.173
5	0.430	0.414	0.399	0.384	0.369	0.355	0.341	0.327	0.314	0.301
6	0.590	0.574	0.558	0.542	0.527	0.511	0.495	0.480	0.465	0.450
7	0.730	0.716	0.702	0.687	0.673	0.658	0.643	0.629	0.614	0.599
8	0.837	0.826	0.815	0.803	0.792	0.780	0.767	0.755	0.742	0.729
9	0.909	0.902	0.894	0.886	0.877	0.869	0.860	0.850	0.841	0.831
10	0.953	0.949	0.944	0.939	0.933	0.927	0.921	0.915	0.908	0.902
11	0.978	0.975	0.972	0.969	0.966	0.963	0.959	0.955	0.951	0.947
12	0.990	0.989	0.987	0.986	0.984	0.982	0.980	0.978	0.976	0.973
13	0.996	0.995	0.995	0.994	0.993	0.992	0.991	0.990	0.989	0.987
14	0.998	0.998	0.998	0.997	0.997	0.997	0.996	0.996	0.995	0.994
15	0.999	0.999	0.999	0.999	0.999	0.999	0.998	0.998	0.998	0.998
16	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.999	0.999	0.999
17	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
18	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
19	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
20	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

الاحتمالات التراكمية لتوزيع بواسون

μ

x	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8
0	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000
1	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003
2	0.028	0.026	0.024	0.022	0.020	0.019	0.017	0.016	0.015	0.014
3	0.077	0.072	0.067	0.063	0.059	0.055	0.052	0.049	0.045	0.042
4	0.164	0.156	0.147	0.140	0.132	0.125	0.118	0.112	0.106	0.100
5	0.288	0.276	0.264	0.253	0.241	0.231	0.220	0.210	0.201	0.191
6	0.435	0.420	0.406	0.392	0.378	0.365	0.351	0.338	0.326	0.313
7	0.584	0.569	0.554	0.539	0.525	0.510	0.496	0.481	0.467	0.453
8	0.716	0.703	0.689	0.676	0.662	0.648	0.634	0.620	0.607	0.593
9	0.820	0.810	0.799	0.788	0.776	0.765	0.753	0.741	0.729	0.717
10	0.894	0.887	0.879	0.871	0.862	0.854	0.845	0.835	0.826	0.816
11	0.942	0.937	0.932	0.927	0.921	0.915	0.909	0.902	0.895	0.888
12	0.970	0.967	0.964	0.961	0.957	0.954	0.950	0.945	0.941	0.936
13	0.986	0.984	0.982	0.981	0.978	0.976	0.974	0.971	0.969	0.966
14	0.994	0.993	0.992	0.991	0.990	0.989	0.987	0.986	0.984	0.983
15	0.997	0.997	0.996	0.996	0.995	0.995	0.994	0.993	0.993	0.992
16	0.999	0.999	0.999	0.998	0.998	0.998	0.997	0.997	0.997	0.996
17	1.000	1.000	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.998
18	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.999
19	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

μ

x	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	9
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001
2	0.013	0.012	0.011	0.010	0.009	0.009	0.008	0.007	0.007	0.006
3	0.040	0.037	0.035	0.032	0.030	0.028	0.026	0.024	0.023	0.021
4	0.094	0.089	0.084	0.079	0.074	0.070	0.066	0.062	0.058	0.055
5	0.182	0.174	0.165	0.157	0.150	0.142	0.135	0.128	0.122	0.116
6	0.301	0.290	0.278	0.267	0.256	0.246	0.236	0.226	0.216	0.207
7	0.439	0.425	0.412	0.399	0.386	0.373	0.360	0.348	0.336	0.324
8	0.579	0.565	0.551	0.537	0.523	0.509	0.496	0.482	0.469	0.456
9	0.704	0.692	0.679	0.666	0.653	0.640	0.627	0.614	0.601	0.587
10	0.806	0.796	0.785	0.774	0.763	0.752	0.741	0.729	0.718	0.706
11	0.881	0.873	0.865	0.857	0.849	0.840	0.831	0.822	0.813	0.803
12	0.931	0.926	0.921	0.915	0.909	0.903	0.897	0.890	0.883	0.876
13	0.963	0.960	0.956	0.952	0.949	0.945	0.940	0.936	0.931	0.926
14	0.981	0.979	0.977	0.975	0.973	0.970	0.968	0.965	0.962	0.959
15	0.991	0.990	0.989	0.988	0.986	0.985	0.983	0.982	0.980	0.978
16	0.996	0.995	0.995	0.994	0.993	0.993	0.992	0.991	0.990	0.989
17	0.998	0.998	0.998	0.997	0.997	0.997	0.996	0.996	0.995	0.995
18	0.999	0.999	0.999	0.999	0.999	0.999	0.998	0.998	0.998	0.998
19	1.000	1.000	1.000	1.000	1.000	0.999	0.999	0.999	0.999	0.999
20	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

الاحتمالات التراكمية لتوزيع بواسون

μ

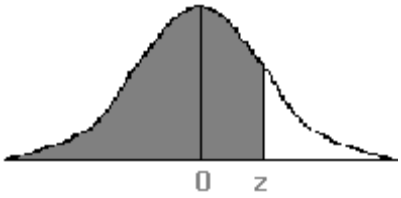
x	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	10
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.006	0.005	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.003
3	0.020	0.018	0.017	0.016	0.015	0.014	0.013	0.012	0.011	0.010
4	0.052	0.049	0.046	0.043	0.040	0.038	0.036	0.033	0.031	0.029
5	0.110	0.104	0.099	0.094	0.089	0.084	0.079	0.075	0.071	0.067
6	0.198	0.189	0.181	0.173	0.165	0.157	0.150	0.143	0.137	0.130
7	0.312	0.301	0.290	0.279	0.269	0.258	0.249	0.239	0.229	0.220
8	0.443	0.430	0.417	0.404	0.392	0.380	0.368	0.356	0.344	0.333
9	0.574	0.561	0.548	0.535	0.522	0.509	0.496	0.483	0.471	0.458
10	0.694	0.682	0.670	0.658	0.645	0.633	0.621	0.608	0.596	0.583
11	0.793	0.783	0.773	0.763	0.752	0.741	0.730	0.719	0.708	0.697
12	0.868	0.861	0.853	0.845	0.836	0.828	0.819	0.810	0.801	0.792
13	0.921	0.916	0.910	0.904	0.898	0.892	0.885	0.879	0.872	0.865
14	0.955	0.952	0.948	0.944	0.940	0.936	0.931	0.927	0.922	0.917
15	0.976	0.974	0.972	0.969	0.967	0.964	0.961	0.958	0.955	0.951
16	0.988	0.987	0.985	0.984	0.982	0.981	0.979	0.977	0.975	0.973
17	0.994	0.993	0.993	0.992	0.991	0.990	0.989	0.988	0.987	0.986
18	0.997	0.997	0.997	0.996	0.996	0.995	0.995	0.994	0.994	0.993
19	0.999	0.999	0.999	0.998	0.998	0.998	0.998	0.997	0.997	0.997
20	1.000	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.998
21	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.999
22	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
23	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
24	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

الاحتمالات التراكمية لتوزيع بواسون

μ

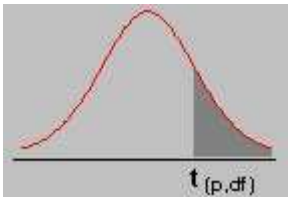
x	11	12	13	14	15	16	17	18	19	20
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	0.005	0.002	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000
4	0.015	0.008	0.004	0.002	0.001	0.000	0.000	0.000	0.000	0.000
5	0.038	0.020	0.011	0.006	0.003	0.001	0.001	0.000	0.000	0.000
6	0.079	0.046	0.026	0.014	0.008	0.004	0.002	0.001	0.001	0.000
7	0.143	0.090	0.054	0.032	0.018	0.010	0.005	0.003	0.002	0.001
8	0.232	0.155	0.100	0.062	0.037	0.022	0.013	0.007	0.004	0.002
9	0.341	0.242	0.166	0.109	0.070	0.043	0.026	0.015	0.009	0.005
10	0.460	0.347	0.252	0.176	0.119	0.077	0.049	0.030	0.018	0.011
11	0.579	0.462	0.353	0.260	0.185	0.127	0.085	0.055	0.035	0.021
12	0.689	0.576	0.463	0.359	0.268	0.193	0.135	0.092	0.061	0.039
13	0.781	0.682	0.573	0.464	0.363	0.275	0.201	0.143	0.098	0.066
14	0.854	0.772	0.675	0.570	0.466	0.368	0.281	0.208	0.150	0.105
15	0.907	0.844	0.764	0.669	0.568	0.467	0.372	0.287	0.215	0.157
16	0.944	0.899	0.836	0.756	0.664	0.566	0.468	0.375	0.292	0.221
17	0.968	0.937	0.891	0.827	0.749	0.659	0.564	0.469	0.378	0.297
18	0.982	0.963	0.930	0.883	0.820	0.742	0.655	0.562	0.470	0.381
19	0.991	0.979	0.957	0.924	0.875	0.812	0.736	0.651	0.561	0.470
20	0.995	0.988	0.975	0.952	0.917	0.868	0.806	0.731	0.647	0.559
21	0.998	0.994	0.986	0.971	0.947	0.911	0.862	0.799	0.726	0.644
22	0.999	0.997	0.992	0.983	0.967	0.942	0.905	0.855	0.793	0.721
23	1.000	0.999	0.996	0.991	0.981	0.963	0.937	0.899	0.849	0.788
24	1.000	0.999	0.998	0.995	0.989	0.978	0.959	0.932	0.893	0.843
25	1.000	1.000	0.999	0.997	0.994	0.987	0.975	0.955	0.927	0.888
26	1.000	1.000	1.000	0.999	0.997	0.993	0.985	0.972	0.951	0.922
27	1.000	1.000	1.000	0.999	0.998	0.996	0.991	0.983	0.969	0.948
28	1.000	1.000	1.000	1.000	0.999	0.998	0.995	0.990	0.981	0.966
29	1.000	1.000	1.000	1.000	1.000	0.999	0.997	0.994	0.988	0.978
30	1.000	1.000	1.000	1.000	1.000	0.999	0.999	0.997	0.993	0.987
31	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.998	0.996	0.992
32	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.998	0.995
33	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.997
34	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999	0.999
35	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.999
36	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

جدول التوزيع الطبيعي المعياري



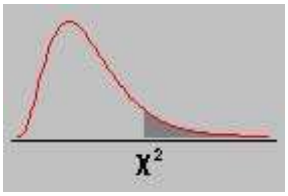
0.09	0.08	0.07	0.06	0.05	0.04	0.03	0.02	0.01	0	
0.5359	0.5319	0.5279	0.5239	0.5199	0.5160	0.5120	0.5080	0.5040	0.50	**0**
0.5753	0.5714	0.5675	0.5636	0.5596	0.5557	0.5517	0.5478	0.5438	0.5398	**0.1**
0.6141	0.6103	0.6064	0.6026	0.5987	0.5948	0.5910	0.5871	0.5832	0.5793	**0.2**
0.6517	0.6480	0.6443	0.6406	0.6368	0.6331	0.6293	0.6255	0.6217	0.6179	**0.3**
0.6879	0.6844	0.6808	0.6772	0.6736	0.6700	0.6664	0.6628	0.6591	0.6554	**0.4**
0.7224	0.7190	0.7157	0.7123	0.7088	0.7054	0.7019	0.6985	0.6950	0.6915	**0.5**
0.7549	0.7517	0.7486	0.7454	0.7422	0.7389	0.7357	0.7324	0.7291	0.7257	**0.6**
0.7852	0.7823	0.7794	0.7764	0.7734	0.7704	0.7673	0.7642	0.7611	0.758	**0.7**
0.8133	0.8106	0.8078	0.8051	0.8023	0.7995	0.7967	0.7939	0.7910	0.7881	**0.8**
0.8389	0.8365	0.8340	0.8315	0.8289	0.8264	0.8238	0.8212	0.8186	0.8159	**0.9**
0.8621	0.8599	0.8577	0.8554	0.8531	0.8508	0.8485	0.8461	0.8438	0.8413	**1**
0.8830	0.8810	0.8790	0.8770	0.8749	0.8729	0.8708	0.8686	0.8665	0.8643	**1.1**
0.9015	0.8997	0.8980	0.8962	0.8944	0.8925	0.8907	0.8888	0.8869	0.8849	**1.2**
0.9177	0.9162	0.9147	0.9131	0.9115	0.9099	0.9082	0.9066	0.9049	0.9032	**1.3**
0.9319	0.9306	0.9292	0.9279	0.9265	0.9251	0.9236	0.9222	0.9207	0.9192	**1.4**
0.9441	0.9429	0.9418	0.9406	0.9394	0.9382	0.9370	0.9357	0.9345	0.9332	**1.5**
0.9545	0.9535	0.9525	0.9515	0.9505	0.9495	0.9484	0.9474	0.9463	0.9452	**1.6**
0.9633	0.9625	0.9616	0.9608	0.9599	0.9591	0.9582	0.9573	0.9564	0.9554	**1.7**
0.9706	0.9699	0.9693	0.9686	0.9678	0.9671	0.9664	0.9656	0.9649	0.9641	**1.8**
0.9767	0.9761	0.9756	0.9750	0.9744	0.9738	0.9732	0.9726	0.9719	0.9713	**1.9**
0.9817	0.9812	0.9808	0.9803	0.9798	0.9793	0.9788	0.9783	0.9778	0.9772	**2**
0.9857	0.9854	0.9850	0.9846	0.9842	0.9838	0.9834	0.9830	0.9826	0.9821	**2.1**
0.9890	0.9887	0.9884	0.9881	0.9878	0.9875	0.9871	0.9868	0.9864	0.9861	**2.2**
0.9916	0.9913	0.9911	0.9909	0.9906	0.9904	0.9901	0.9898	0.9896	0.9893	**2.3**
0.9936	0.9934	0.9932	0.9931	0.9929	0.9927	0.9925	0.9922	0.9920	0.9918	**2.4**
0.9952	0.9951	0.9949	0.9948	0.9946	0.9945	0.9943	0.9941	0.9940	0.9938	**2.5**
0.9964	0.9963	0.9962	0.9961	0.9960	0.9959	0.9957	0.9956	0.9955	0.9953	**2.6**
0.9974	0.9973	0.9972	0.9971	0.9970	0.9969	0.9968	0.9967	0.9966	0.9965	**2.7**
0.9981	0.9980	0.9979	0.9979	0.9978	0.9977	0.9977	0.9976	0.9975	0.9974	**2.8**
0.9986	0.9986	0.9985	0.9985	0.9984	0.9984	0.9983	0.9982	0.9982	0.9981	**2.9**
0.9990	0.9990	0.9989	0.9989	0.9989	0.9988	0.9988	0.9987	0.9987	0.9987	**3**
0.9993	0.9993	0.9992	0.9992	0.9992	0.9992	0.9991	0.9991	0.9991	0.9990	**3.1**
0.9995	0.9995	0.9995	0.9994	0.9994	0.9994	0.9994	0.9994	0.9993	0.9993	**3.2**
0.9997	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9995	0.9995	0.9995	**3.3**

يتبع التوزيع الطبيعي المعياري										
-0.09	-0.08	-0.07	-0.06	-0.05	-0.04	-0.03	-0.02	-0.01	0	
0.0003	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0005	0.0005	0.0005	-3.30
0.0005	0.0005	0.0005	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0007	-3.20
0.0007	0.0007	0.0008	0.0008	0.0008	0.0008	0.0009	0.0009	0.0009	0.0010	-3.10
0.0010	0.0010	0.0011	0.0011	0.0011	0.0012	0.0012	0.0013	0.0013	0.0013	-3.00
0.0014	0.0014	0.0015	0.0015	0.0016	0.0016	0.0017	0.0018	0.0018	0.0019	-2.90
0.0019	0.0020	0.0021	0.0021	0.0022	0.0023	0.0023	0.0024	0.0025	0.0026	-2.80
0.0026	0.0027	0.0028	0.0029	0.0030	0.0031	0.0032	0.0033	0.0034	0.0035	-2.70
0.0036	0.0037	0.0038	0.0039	0.0040	0.0041	0.0043	0.0044	0.0045	0.0047	-2.60
0.0048	0.0049	0.0051	0.0052	0.0054	0.0055	0.0057	0.0059	0.0060	0.0062	-2.50
0.0064	0.0066	0.0068	0.0069	0.0071	0.0073	0.0075	0.0078	0.0080	0.0082	-2.40
0.0084	0.0087	0.0089	0.0091	0.0094	0.0096	0.0099	0.0102	0.0104	0.0107	-2.30
0.0110	0.0113	0.0116	0.0119	0.0122	0.0125	0.0129	0.0132	0.0136	0.0139	-2.20
0.0143	0.0146	0.0150	0.0154	0.0158	0.0162	0.0166	0.0170	0.0174	0.0179	-2.10
0.0183	0.0188	0.0192	0.0197	0.0202	0.0207	0.0212	0.0217	0.0222	0.0228	-2.00
0.0233	0.0239	0.0244	0.0250	0.0256	0.0262	0.0268	0.0274	0.0281	0.0287	-1.90
0.0294	0.0301	0.0307	0.0314	0.0322	0.0329	0.0336	0.0344	0.0351	0.0359	-1.80
0.0367	0.0375	0.0384	0.0392	0.0401	0.0409	0.0418	0.0427	0.0436	0.0446	-1.70
0.0455	0.0465	0.0475	0.0485	0.0495	0.0505	0.0516	0.0526	0.0537	0.0548	-1.60
0.0559	0.0571	0.0582	0.0594	0.0606	0.0618	0.0630	0.0643	0.0655	0.0668	-1.50
0.0681	0.0694	0.0708	0.0721	0.0735	0.0749	0.0764	0.0778	0.0793	0.0808	-1.40
0.0823	0.0838	0.0853	0.0869	0.0885	0.0901	0.0918	0.0934	0.0951	0.0968	-1.30
0.0985	0.1003	0.1020	0.1038	0.1056	0.1075	0.1093	0.1112	0.1131	0.1151	-1.20
0.1170	0.1190	0.1210	0.1230	0.1251	0.1271	0.1292	0.1314	0.1335	0.1357	-1.10
0.1379	0.1401	0.1423	0.1446	0.1469	0.1492	0.1515	0.1539	0.1562	0.1587	-1.00
0.1611	0.1635	0.1660	0.1685	0.1711	0.1736	0.1762	0.1788	0.1814	0.1841	-0.90
0.1867	0.1894	0.1922	0.1949	0.1977	0.2005	0.2033	0.2061	0.2090	0.2119	-0.80
0.2148	0.2177	0.2206	0.2236	0.2266	0.2296	0.2327	0.2358	0.2389	0.2420	-0.70
0.2451	0.2483	0.2514	0.2546	0.2578	0.2611	0.2643	0.2676	0.2709	0.2743	-0.60
0.2776	0.2810	0.2843	0.2877	0.2912	0.2946	0.2981	0.3015	0.3050	0.3085	-0.50
0.3121	0.3156	0.3192	0.3228	0.3264	0.3300	0.3336	0.3372	0.3409	0.3446	-0.40
0.3483	0.3520	0.3557	0.3594	0.3632	0.3669	0.3707	0.3745	0.3783	0.3821	-0.30
0.3859	0.3897	0.3936	0.3974	0.4013	0.4052	0.4090	0.4129	0.4168	0.4207	-0.20
0.4247	0.4286	0.4325	0.4364	0.4404	0.4443	0.4483	0.4522	0.4562	0.4602	-0.10
0.4641	0.4681	0.4721	0.4761	0.4801	0.4840	0.4880	0.4920	0.4960	0.5000	0.00



توزيع t

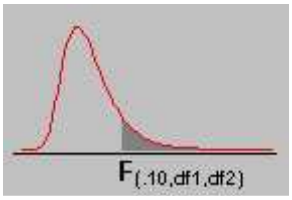
df\p	0.40	0.25	0.10	0.05	0.025	0.01	0.005	0.0005
1	0.324920	1.000000	3.077684	6.313752	12.70620	31.82052	63.65674	636.6192
2	0.288675	0.816497	1.885618	2.919986	4.30265	6.96456	9.92484	31.5991
3	0.276671	0.764892	1.637744	2.353363	3.18245	4.54070	5.84091	12.9240
4	0.270722	0.740697	1.533206	2.131847	2.77645	3.74695	4.60409	8.6103
5	0.267181	0.726687	1.475884	2.015048	2.57058	3.36493	4.03214	6.8688
6	0.264835	0.717558	1.439756	1.943180	2.44691	3.14267	3.70743	5.9588
7	0.263167	0.711142	1.414924	1.894579	2.36462	2.99795	3.49948	5.4079
8	0.261921	0.706387	1.396815	1.859548	2.30600	2.89646	3.35539	5.0413
9	0.260955	0.702722	1.383029	1.833113	2.26216	2.82144	3.24984	4.7809
10	0.260185	0.699812	1.372184	1.812461	2.22814	2.76377	3.16927	4.5869
11	0.259556	0.697445	1.363430	1.795885	2.20099	2.71808	3.10581	4.4370
12	0.259033	0.695483	1.356217	1.782288	2.17881	2.68100	3.05454	4.3178
13	0.258591	0.693829	1.350171	1.770933	2.16037	2.65031	3.01228	4.2208
14	0.258213	0.692417	1.345030	1.761310	2.14479	2.62449	2.97684	4.1405
15	0.257885	0.691197	1.340606	1.753050	2.13145	2.60248	2.94671	4.0728
16	0.257599	0.690132	1.336757	1.745884	2.11991	2.58349	2.92078	4.0150
17	0.257347	0.689195	1.333379	1.739607	2.10982	2.56693	2.89823	3.9651
18	0.257123	0.688364	1.330391	1.734064	2.10092	2.55238	2.87844	3.9216
19	0.256923	0.687621	1.327728	1.729133	2.09302	2.53948	2.86093	3.8834
20	0.256743	0.686954	1.325341	1.724718	2.08596	2.52798	2.84534	3.8495
21	0.256580	0.686352	1.323188	1.720743	2.07961	2.51765	2.83136	3.8193
22	0.256432	0.685805	1.321237	1.717144	2.07387	2.50832	2.81876	3.7921
23	0.256297	0.685306	1.319460	1.713872	2.06866	2.49987	2.80734	3.7676
24	0.256173	0.684850	1.317836	1.710882	2.06390	2.49216	2.79694	3.7454
25	0.256060	0.684430	1.316345	1.708141	2.05954	2.48511	2.78744	3.7251
26	0.255955	0.684043	1.314972	1.705618	2.05553	2.47863	2.77871	3.7066
27	0.255858	0.683685	1.313703	1.703288	2.05183	2.47266	2.77068	3.6896
28	0.255768	0.683353	1.312527	1.701131	2.04841	2.46714	2.76326	3.6739
29	0.255684	0.683044	1.311434	1.699127	2.04523	2.46202	2.75639	3.6594
30	0.255605	0.682756	1.310415	1.697261	2.04227	2.45726	2.75000	3.6460
inf	0.253347	0.674490	1.281552	1.644854	1.95996	2.32635	2.57583	3.2905



توزيع χ^2

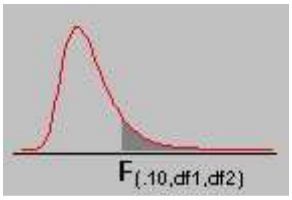
df\area	0.995	0.99	0.975	0.95	0.9	0.1	0.05	0.025	0.01	0.005
1	0.000	0.000	0.001	0.004	0.016	2.706	3.841	5.024	6.635	7.879
2	0.010	0.020	0.051	0.103	0.211	4.605	5.991	7.378	9.210	10.597
3	0.072	0.115	0.216	0.352	0.584	6.251	7.815	9.348	11.345	12.838
4	0.207	0.297	0.484	0.711	1.064	7.779	9.488	11.143	13.277	14.860
5	0.412	0.554	0.831	1.145	1.610	9.236	11.071	12.833	15.086	16.750
6	0.676	0.872	1.237	1.635	2.204	10.645	12.592	14.449	16.812	18.548
7	0.989	1.239	1.690	2.167	2.833	12.017	14.067	16.013	18.475	20.278
8	1.344	1.647	2.180	2.733	3.490	13.362	15.507	17.535	20.090	21.955
9	1.735	2.088	2.700	3.325	4.168	14.684	16.919	19.023	21.666	23.589
10	2.156	2.558	3.247	3.940	4.865	15.987	18.307	20.483	23.209	25.188
11	2.603	3.053	3.816	4.575	5.578	17.275	19.675	21.920	24.725	26.757
12	3.074	3.571	4.404	5.226	6.304	18.549	21.026	23.337	26.217	28.300
13	3.565	4.107	5.009	5.892	7.042	19.812	22.362	24.736	27.688	29.819
14	4.075	4.660	5.629	6.571	7.790	21.064	23.685	26.119	29.141	31.319
15	4.601	5.229	6.262	7.261	8.547	22.307	24.996	27.488	30.578	32.801
16	5.142	5.812	6.908	7.962	9.312	23.542	26.296	28.845	32.000	34.267
17	5.697	6.408	7.564	8.672	10.085	24.769	27.587	30.191	33.409	35.718
18	6.265	7.015	8.231	9.390	10.865	25.989	28.869	31.526	34.805	37.156
19	6.844	7.633	8.907	10.117	11.651	27.204	30.144	32.852	36.191	38.582
20	7.434	8.260	9.591	10.851	12.443	28.412	31.410	34.170	37.566	39.997
21	8.034	8.897	10.283	11.591	13.240	29.615	32.671	35.479	38.932	41.401
22	8.643	9.542	10.982	12.338	14.041	30.813	33.924	36.781	40.289	42.796
23	9.260	10.196	11.689	13.091	14.848	32.007	35.172	38.076	41.638	44.181
24	9.886	10.856	12.401	13.848	15.659	33.196	36.415	39.364	42.980	45.559
25	10.520	11.524	13.120	14.611	16.473	34.382	37.652	40.646	44.314	46.928
26	11.160	12.198	13.844	15.379	17.292	35.563	38.885	41.923	45.642	48.290
27	11.808	12.879	14.573	16.151	18.114	36.741	40.113	43.195	46.963	49.645
28	12.461	13.565	15.308	16.928	18.939	37.916	41.337	44.461	48.278	50.993
29	13.121	14.256	16.047	17.708	19.768	39.087	42.557	45.722	49.588	52.336
30	13.787	14.953	16.791	18.493	20.599	40.256	43.773	46.979	50.892	53.672
40	20.707	22.164	24.433	26.509	29.051	51.805	55.758	59.342	63.691	66.766
50	27.991	29.707	32.357	34.764	37.689	63.167	67.505	71.42	76.154	79.49
60	35.534	37.485	40.482	43.188	46.459	74.397	79.082	83.298	88.379	91.952
70	43.275	45.442	48.758	51.739	55.329	85.527	90.531	95.023	100.425	104.215
80	51.172	53.54	57.153	60.391	64.278	96.578	101.879	106.629	112.329	116.321
90	59.196	61.754	65.647	69.126	73.291	107.565	113.145	118.136	124.116	128.299
100	67.328	70.065	74.222	77.929	82.358	118.498	124.342	129.561	135.807	140.169

F Table for alpha=.10 .



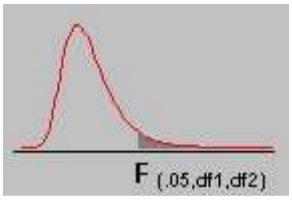
df2/df1	1	2	3	4	5	6	7	8	9
1	39.86	49.50	53.59	55.83	57.24	58.20	58.91	59.44	59.86
2	8.53	9.00	9.16	9.24	9.29	9.33	9.35	9.37	9.38
3	5.54	5.46	5.39	5.34	5.31	5.28	5.27	5.25	5.24
4	4.54	4.32	4.19	4.11	4.05	4.01	3.98	3.95	3.94
5	4.06	3.78	3.62	3.52	3.45	3.40	3.37	3.34	3.32
6	3.78	3.46	3.29	3.18	3.11	3.05	3.01	2.98	2.96
7	3.59	3.26	3.07	2.96	2.88	2.83	2.78	2.75	2.72
8	3.46	3.11	2.92	2.81	2.73	2.67	2.62	2.59	2.56
9	3.36	3.01	2.81	2.69	2.61	2.55	2.51	2.47	2.44
10	3.29	2.92	2.73	2.61	2.52	2.46	2.41	2.38	2.35
11	3.23	2.86	2.66	2.54	2.45	2.39	2.34	2.30	2.27
12	3.18	2.81	2.61	2.48	2.39	2.33	2.28	2.24	2.21
13	3.14	2.76	2.56	2.43	2.35	2.28	2.23	2.20	2.16
14	3.10	2.73	2.52	2.39	2.31	2.24	2.19	2.15	2.12
15	3.07	2.70	2.49	2.36	2.27	2.21	2.16	2.12	2.09
16	3.05	2.67	2.46	2.33	2.24	2.18	2.13	2.09	2.06
17	3.03	2.64	2.44	2.31	2.22	2.15	2.10	2.06	2.03
18	3.01	2.62	2.42	2.29	2.20	2.13	2.08	2.04	2.00
19	2.99	2.61	2.40	2.27	2.18	2.11	2.06	2.02	1.98
20	2.97	2.59	2.38	2.25	2.16	2.09	2.04	2.00	1.96
21	2.96	2.57	2.36	2.23	2.14	2.08	2.02	1.98	1.95
22	2.95	2.56	2.35	2.22	2.13	2.06	2.01	1.97	1.93
23	2.94	2.55	2.34	2.21	2.11	2.05	1.99	1.95	1.92
24	2.93	2.54	2.33	2.19	2.10	2.04	1.98	1.94	1.91
25	2.92	2.53	2.32	2.18	2.09	2.02	1.97	1.93	1.89
26	2.91	2.52	2.31	2.17	2.08	2.01	1.96	1.92	1.88
27	2.90	2.51	2.30	2.17	2.07	2.00	1.95	1.91	1.87
28	2.89	2.50	2.29	2.16	2.06	2.00	1.94	1.90	1.87
29	2.89	2.50	2.28	2.15	2.06	1.99	1.93	1.89	1.86
30	2.88	2.49	2.28	2.14	2.05	1.98	1.93	1.88	1.85
40	2.84	2.44	2.23	2.09	2.00	1.93	1.87	1.83	1.79
60	2.79	2.39	2.18	2.04	1.95	1.87	1.82	1.77	1.74
120	2.75	2.35	2.13	1.99	1.90	1.82	1.77	1.72	1.68
inf	2.71	2.30	2.08	1.94	1.85	1.77	1.72	1.67	1.63

F Table for alpha=.10 .



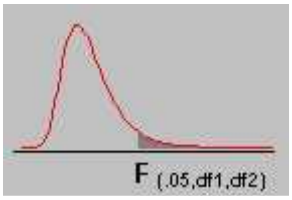
df2/df1	10	12	15	20	24	30	40	60	120	INF
1	60.19	60.71	61.22	61.74	62.00	62.26	62.53	62.79	63.06	63.33
2	9.39	9.41	9.42	9.44	9.45	9.46	9.47	9.47	9.48	9.49
3	5.23	5.22	5.20	5.18	5.18	5.17	5.16	5.15	5.14	5.13
4	3.92	3.90	3.87	3.84	3.83	3.82	3.80	3.79	3.78	3.76
5	3.30	3.27	3.24	3.21	3.19	3.17	3.16	3.14	3.12	3.11
6	2.94	2.90	2.87	2.84	2.82	2.80	2.78	2.76	2.74	2.72
7	2.70	2.67	2.63	2.59	2.58	2.56	2.54	2.51	2.49	2.47
8	2.54	2.50	2.46	2.42	2.40	2.38	2.36	2.34	2.32	2.29
9	2.42	2.38	2.34	2.30	2.28	2.25	2.23	2.21	2.18	2.16
10	2.32	2.28	2.24	2.20	2.18	2.16	2.13	2.11	2.08	2.06
11	2.25	2.21	2.17	2.12	2.10	2.08	2.05	2.03	2.00	1.97
12	2.19	2.15	2.10	2.06	2.04	2.01	1.99	1.96	1.93	1.90
13	2.14	2.10	2.05	2.01	1.98	1.96	1.93	1.90	1.88	1.85
14	2.10	2.05	2.01	1.96	1.94	1.91	1.89	1.86	1.83	1.80
15	2.06	2.02	1.97	1.92	1.90	1.87	1.85	1.82	1.79	1.76
16	2.03	1.99	1.94	1.89	1.87	1.84	1.81	1.78	1.75	1.72
17	2.00	1.96	1.91	1.86	1.84	1.81	1.78	1.75	1.72	1.69
18	1.98	1.93	1.89	1.84	1.81	1.78	1.75	1.72	1.69	1.66
19	1.96	1.91	1.86	1.81	1.79	1.76	1.73	1.70	1.67	1.63
20	1.94	1.89	1.84	1.79	1.77	1.74	1.71	1.68	1.64	1.61
21	1.92	1.87	1.83	1.78	1.75	1.72	1.69	1.66	1.62	1.59
22	1.90	1.86	1.81	1.76	1.73	1.70	1.67	1.64	1.60	1.57
23	1.89	1.84	1.80	1.74	1.72	1.69	1.66	1.62	1.59	1.55
24	1.88	1.83	1.78	1.73	1.70	1.67	1.64	1.61	1.57	1.53
25	1.87	1.82	1.77	1.72	1.69	1.66	1.63	1.59	1.56	1.52
26	1.86	1.81	1.76	1.71	1.68	1.65	1.61	1.58	1.54	1.50
27	1.85	1.80	1.75	1.70	1.67	1.64	1.60	1.57	1.53	1.49
28	1.84	1.79	1.74	1.69	1.66	1.63	1.59	1.56	1.52	1.48
29	1.83	1.78	1.73	1.68	1.65	1.62	1.58	1.55	1.51	1.47
30	1.82	1.77	1.72	1.67	1.64	1.61	1.57	1.54	1.50	1.46
40	1.76	1.71	1.66	1.61	1.57	1.54	1.51	1.47	1.42	1.38
60	1.71	1.66	1.60	1.54	1.51	1.48	1.44	1.40	1.35	1.29
120	1.65	1.60	1.55	1.48	1.45	1.41	1.37	1.32	1.26	1.19
inf	1.60	1.55	1.49	1.42	1.38	1.34	1.30	1.24	1.17	1.00

F Table for alpha=.05 .



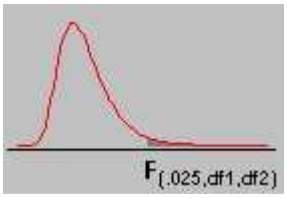
df2/df1	1	2	3	4	5	6	7	8	9
1	161.45	199.50	215.71	224.58	230.16	233.99	236.77	238.88	240.54
2	18.51	19.00	19.16	19.25	19.30	19.33	19.35	19.37	19.38
3	10.13	9.55	9.28	9.12	9.01	8.94	8.89	8.85	8.81
4	7.71	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00
5	6.61	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.77
6	5.99	5.14	4.76	4.53	4.39	4.28	4.21	4.15	4.10
7	5.59	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68
8	5.32	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39
9	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18
10	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02
11	4.84	3.98	3.59	3.36	3.20	3.09	3.01	2.95	2.90
12	4.75	3.89	3.49	3.26	3.11	3.00	2.91	2.85	2.80
13	4.67	3.81	3.41	3.18	3.03	2.92	2.83	2.77	2.71
14	4.60	3.74	3.34	3.11	2.96	2.85	2.76	2.70	2.65
15	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59
16	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54
17	4.45	3.59	3.20	2.96	2.81	2.70	2.61	2.55	2.49
18	4.41	3.55	3.16	2.93	2.77	2.66	2.58	2.51	2.46
19	4.38	3.52	3.13	2.90	2.74	2.63	2.54	2.48	2.42
20	4.35	3.49	3.10	2.87	2.71	2.60	2.51	2.45	2.39
21	4.32	3.47	3.07	2.84	2.68	2.57	2.49	2.42	2.37
22	4.30	3.44	3.05	2.82	2.66	2.55	2.46	2.40	2.34
23	4.28	3.42	3.03	2.80	2.64	2.53	2.44	2.37	2.32
24	4.26	3.40	3.01	2.78	2.62	2.51	2.42	2.36	2.30
25	4.24	3.39	2.99	2.76	2.60	2.49	2.40	2.34	2.28
26	4.23	3.37	2.98	2.74	2.59	2.47	2.39	2.32	2.27
27	4.21	3.35	2.96	2.73	2.57	2.46	2.37	2.31	2.25
28	4.20	3.34	2.95	2.71	2.56	2.45	2.36	2.29	2.24
29	4.18	3.33	2.93	2.70	2.55	2.43	2.35	2.28	2.22
30	4.17	3.32	2.92	2.69	2.53	2.42	2.33	2.27	2.21
40	4.08	3.23	2.84	2.61	2.45	2.34	2.25	2.18	2.12
60	4.00	3.15	2.76	2.53	2.37	2.25	2.17	2.10	2.04
120	3.92	3.07	2.68	2.45	2.29	2.18	2.09	2.02	1.96
inf	3.84	3.00	2.60	2.37	2.21	2.10	2.01	1.94	1.88

F Table for alpha=.05 .



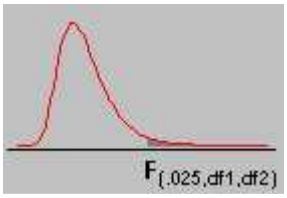
df2/df1	10	12	15	20	24	30	40	60	120	INF
1	241.88	243.91	245.95	248.01	249.05	250.10	251.14	252.20	253.25	254.31
2	19.40	19.41	19.43	19.45	19.45	19.46	19.47	19.48	19.49	19.50
3	8.79	8.74	8.70	8.66	8.64	8.62	8.59	8.57	8.55	8.53
4	5.96	5.91	5.86	5.80	5.77	5.75	5.72	5.69	5.66	5.63
5	4.74	4.68	4.62	4.56	4.53	4.50	4.46	4.43	4.40	4.37
6	4.06	4.00	3.94	3.87	3.84	3.81	3.77	3.74	3.70	3.67
7	3.64	3.57	3.51	3.44	3.41	3.38	3.34	3.30	3.27	3.23
8	3.35	3.28	3.22	3.15	3.12	3.08	3.04	3.01	2.97	2.93
9	3.14	3.07	3.01	2.94	2.90	2.86	2.83	2.79	2.75	2.71
10	2.98	2.91	2.85	2.77	2.74	2.70	2.66	2.62	2.58	2.54
11	2.85	2.79	2.72	2.65	2.61	2.57	2.53	2.49	2.45	2.40
12	2.75	2.69	2.62	2.54	2.51	2.47	2.43	2.38	2.34	2.30
13	2.67	2.60	2.53	2.46	2.42	2.38	2.34	2.30	2.25	2.21
14	2.60	2.53	2.46	2.39	2.35	2.31	2.27	2.22	2.18	2.13
15	2.54	2.48	2.40	2.33	2.29	2.25	2.20	2.16	2.11	2.07
16	2.49	2.42	2.35	2.28	2.24	2.19	2.15	2.11	2.06	2.01
17	2.45	2.38	2.31	2.23	2.19	2.15	2.10	2.06	2.01	1.96
18	2.41	2.34	2.27	2.19	2.15	2.11	2.06	2.02	1.97	1.92
19	2.38	2.31	2.23	2.16	2.11	2.07	2.03	1.98	1.93	1.88
20	2.35	2.28	2.20	2.12	2.08	2.04	1.99	1.95	1.90	1.84
21	2.32	2.25	2.18	2.10	2.05	2.01	1.96	1.92	1.87	1.81
22	2.30	2.23	2.15	2.07	2.03	1.98	1.94	1.89	1.84	1.78
23	2.27	2.20	2.13	2.05	2.01	1.96	1.91	1.86	1.81	1.76
24	2.25	2.18	2.11	2.03	1.98	1.94	1.89	1.84	1.79	1.73
25	2.24	2.16	2.09	2.01	1.96	1.92	1.87	1.82	1.77	1.71
26	2.22	2.15	2.07	1.99	1.95	1.90	1.85	1.80	1.75	1.69
27	2.20	2.13	2.06	1.97	1.93	1.88	1.84	1.79	1.73	1.67
28	2.19	2.12	2.04	1.96	1.91	1.87	1.82	1.77	1.71	1.65
29	2.18	2.10	2.03	1.94	1.90	1.85	1.81	1.75	1.70	1.64
30	2.16	2.09	2.01	1.93	1.89	1.84	1.79	1.74	1.68	1.62
40	2.08	2.00	1.92	1.84	1.79	1.74	1.69	1.64	1.58	1.51
60	1.99	1.92	1.84	1.75	1.70	1.65	1.59	1.53	1.47	1.39
120	1.91	1.83	1.75	1.66	1.61	1.55	1.50	1.43	1.35	1.25
inf	1.83	1.75	1.67	1.57	1.52	1.46	1.39	1.32	1.22	1.00

F Table for alpha=.025 .



df2/df1	1	2	3	4	5	6	7	8	9
1	647.79	799.50	864.16	899.58	921.85	937.11	948.22	956.66	963.28
2	38.51	39.00	39.17	39.25	39.30	39.33	39.36	39.37	39.39
3	17.44	16.04	15.44	15.10	14.88	14.73	14.62	14.54	14.47
4	12.22	10.65	9.98	9.60	9.36	9.20	9.07	8.98	8.90
5	10.01	8.43	7.76	7.39	7.15	6.98	6.85	6.76	6.68
6	8.81	7.26	6.60	6.23	5.99	5.82	5.70	5.60	5.52
7	8.07	6.54	5.89	5.52	5.29	5.12	4.99	4.90	4.82
8	7.57	6.06	5.42	5.05	4.82	4.65	4.53	4.43	4.36
9	7.21	5.71	5.08	4.72	4.48	4.32	4.20	4.10	4.03
10	6.94	5.46	4.83	4.47	4.24	4.07	3.95	3.85	3.78
11	6.72	5.26	4.63	4.28	4.04	3.88	3.76	3.66	3.59
12	6.55	5.10	4.47	4.12	3.89	3.73	3.61	3.51	3.44
13	6.41	4.97	4.35	4.00	3.77	3.60	3.48	3.39	3.31
14	6.30	4.86	4.24	3.89	3.66	3.50	3.38	3.29	3.21
15	6.20	4.77	4.15	3.80	3.58	3.41	3.29	3.20	3.12
16	6.12	4.69	4.08	3.73	3.50	3.34	3.22	3.12	3.05
17	6.04	4.62	4.01	3.66	3.44	3.28	3.16	3.06	2.98
18	5.98	4.56	3.95	3.61	3.38	3.22	3.10	3.01	2.93
19	5.92	4.51	3.90	3.56	3.33	3.17	3.05	2.96	2.88
20	5.87	4.46	3.86	3.51	3.29	3.13	3.01	2.91	2.84
21	5.83	4.42	3.82	3.48	3.25	3.09	2.97	2.87	2.80
22	5.79	4.38	3.78	3.44	3.22	3.05	2.93	2.84	2.76
23	5.75	4.35	3.75	3.41	3.18	3.02	2.90	2.81	2.73
24	5.72	4.32	3.72	3.38	3.15	2.99	2.87	2.78	2.70
25	5.69	4.29	3.69	3.35	3.13	2.97	2.85	2.75	2.68
26	5.66	4.27	3.67	3.33	3.10	2.94	2.82	2.73	2.65
27	5.63	4.24	3.65	3.31	3.08	2.92	2.80	2.71	2.63
28	5.61	4.22	3.63	3.29	3.06	2.90	2.78	2.69	2.61
29	5.59	4.20	3.61	3.27	3.04	2.88	2.76	2.67	2.59
30	5.57	4.18	3.59	3.25	3.03	2.87	2.75	2.65	2.57
40	5.42	4.05	3.46	3.13	2.90	2.74	2.62	2.53	2.45
60	5.29	3.93	3.34	3.01	2.79	2.63	2.51	2.41	2.33
120	5.15	3.80	3.23	2.89	2.67	2.52	2.39	2.30	2.22
inf	5.02	3.69	3.12	2.79	2.57	2.41	2.29	2.19	2.11

F Table for alpha=.025 .



df2/df1	10	12	15	20	24	30	40	60	120	INF
1	968.63	976.71	984.87	993.10	997.25	1001.41	1005.60	1009.80	1014.02	1018.26
2	39.40	39.41	39.43	39.45	39.46	39.47	39.47	39.48	39.49	39.50
3	14.42	14.34	14.25	14.17	14.12	14.08	14.04	13.99	13.95	13.90
4	8.84	8.75	8.66	8.56	8.51	8.46	8.41	8.36	8.31	8.26
5	6.62	6.52	6.43	6.33	6.28	6.23	6.18	6.12	6.07	6.02
6	5.46	5.37	5.27	5.17	5.12	5.07	5.01	4.96	4.90	4.85
7	4.76	4.67	4.57	4.47	4.42	4.36	4.31	4.25	4.20	4.14
8	4.30	4.20	4.10	4.00	3.95	3.89	3.84	3.78	3.73	3.67
9	3.96	3.87	3.77	3.67	3.61	3.56	3.51	3.45	3.39	3.33
10	3.72	3.62	3.52	3.42	3.37	3.31	3.26	3.20	3.14	3.08
11	3.53	3.43	3.33	3.23	3.17	3.12	3.06	3.00	2.94	2.88
12	3.37	3.28	3.18	3.07	3.02	2.96	2.91	2.85	2.79	2.73
13	3.25	3.15	3.05	2.95	2.89	2.84	2.78	2.72	2.66	2.60
14	3.15	3.05	2.95	2.84	2.79	2.73	2.67	2.61	2.55	2.49
15	3.06	2.96	2.86	2.76	2.70	2.64	2.59	2.52	2.46	2.40
16	2.99	2.89	2.79	2.68	2.63	2.57	2.51	2.45	2.38	2.32
17	2.92	2.82	2.72	2.62	2.56	2.50	2.44	2.38	2.32	2.25
18	2.87	2.77	2.67	2.56	2.50	2.45	2.38	2.32	2.26	2.19
19	2.82	2.72	2.62	2.51	2.45	2.39	2.33	2.27	2.20	2.13
20	2.77	2.68	2.57	2.46	2.41	2.35	2.29	2.22	2.16	2.09
21	2.73	2.64	2.53	2.42	2.37	2.31	2.25	2.18	2.11	2.04
22	2.70	2.60	2.50	2.39	2.33	2.27	2.21	2.15	2.08	2.00
23	2.67	2.57	2.47	2.36	2.30	2.24	2.18	2.11	2.04	1.97
24	2.64	2.54	2.44	2.33	2.27	2.21	2.15	2.08	2.01	1.94
25	2.61	2.51	2.41	2.30	2.24	2.18	2.12	2.05	1.98	1.91
26	2.59	2.49	2.39	2.28	2.22	2.16	2.09	2.03	1.95	1.88
27	2.57	2.47	2.36	2.25	2.19	2.13	2.07	2.00	1.93	1.85
28	2.55	2.45	2.34	2.23	2.17	2.11	2.05	1.98	1.91	1.83
29	2.53	2.43	2.32	2.21	2.15	2.09	2.03	1.96	1.89	1.81
30	2.51	2.41	2.31	2.20	2.14	2.07	2.01	1.94	1.87	1.79
40	2.39	2.29	2.18	2.07	2.01	1.94	1.88	1.80	1.72	1.64
60	2.27	2.17	2.06	1.94	1.88	1.82	1.74	1.67	1.58	1.48
120	2.16	2.05	1.95	1.82	1.76	1.69	1.61	1.53	1.43	1.31
inf	2.05	1.94	1.83	1.71	1.64	1.57	1.48	1.39	1.27	1.00

F Table for alpha=.01 .

df2/df1	1	2	3	4	5	6	7	8	9
1	4052.18	4999.50	5403.35	5624.58	5763.65	5858.99	5928.36	5981.07	6022.47
2	98.50	99.00	99.17	99.25	99.30	99.33	99.36	99.37	99.39
3	34.12	30.82	29.46	28.71	28.24	27.91	27.67	27.49	27.35
4	21.20	18.00	16.69	15.98	15.52	15.21	14.98	14.80	14.66
5	16.26	13.27	12.06	11.39	10.97	10.67	10.46	10.29	10.16
6	13.75	10.93	9.78	9.15	8.75	8.47	8.26	8.10	7.98
7	12.25	9.55	8.45	7.85	7.46	7.19	6.99	6.84	6.72
8	11.26	8.65	7.59	7.01	6.63	6.37	6.18	6.03	5.91
9	10.56	8.02	6.99	6.42	6.06	5.80	5.61	5.47	5.35
10	10.04	7.56	6.55	5.99	5.64	5.39	5.20	5.06	4.94
11	9.65	7.21	6.22	5.67	5.32	5.07	4.89	4.74	4.63
12	9.33	6.93	5.95	5.41	5.06	4.82	4.64	4.50	4.39
13	9.07	6.70	5.74	5.21	4.86	4.62	4.44	4.30	4.19
14	8.86	6.52	5.56	5.04	4.70	4.46	4.28	4.14	4.03
15	8.68	6.36	5.42	4.89	4.56	4.32	4.14	4.00	3.90
16	8.53	6.23	5.29	4.77	4.44	4.20	4.03	3.89	3.78
17	8.40	6.11	5.19	4.67	4.34	4.10	3.93	3.79	3.68
18	8.29	6.01	5.09	4.58	4.25	4.02	3.84	3.71	3.60
19	8.19	5.93	5.01	4.50	4.17	3.94	3.77	3.63	3.52
20	8.10	5.85	4.94	4.43	4.10	3.87	3.70	3.56	3.46
21	8.02	5.78	4.87	4.37	4.04	3.81	3.64	3.51	3.40
22	7.95	5.72	4.82	4.31	3.99	3.76	3.59	3.45	3.35
23	7.88	5.66	4.77	4.26	3.94	3.71	3.54	3.41	3.30
24	7.82	5.61	4.72	4.22	3.90	3.67	3.50	3.36	3.26
25	7.77	5.57	4.68	4.18	3.86	3.63	3.46	3.32	3.22
26	7.72	5.53	4.64	4.14	3.82	3.59	3.42	3.29	3.18
27	7.68	5.49	4.60	4.11	3.79	3.56	3.39	3.26	3.15
28	7.64	5.45	4.57	4.07	3.75	3.53	3.36	3.23	3.12
29	7.60	5.42	4.54	4.05	3.73	3.50	3.33	3.20	3.09
30	7.56	5.39	4.51	4.02	3.70	3.47	3.30	3.17	3.07
40	7.31	5.18	4.31	3.83	3.51	3.29	3.12	2.99	2.89
60	7.08	4.98	4.13	3.65	3.34	3.12	2.95	2.82	2.72
120	6.85	4.79	3.95	3.48	3.17	2.96	2.79	2.66	2.56
inf	6.64	4.61	3.78	3.32	3.02	2.80	2.64	2.51	2.41

F Table for alpha=.01 .

df2/df1	10	12	15	20	24	30	40	60	120	INF
1	6055.85	6106.32	6157.29	6208.73	6234.63	6260.65	6286.78	6313.03	6339.39	6365.86
2	99.40	99.42	99.43	99.45	99.46	99.47	99.47	99.48	99.49	99.50
3	27.23	27.05	26.87	26.69	26.60	26.51	26.41	26.32	26.22	26.13
4	14.55	14.37	14.20	14.02	13.93	13.84	13.75	13.65	13.56	13.46
5	10.05	9.89	9.72	9.55	9.47	9.38	9.29	9.20	9.11	9.02
6	7.87	7.72	7.56	7.40	7.31	7.23	7.14	7.06	6.97	6.88
7	6.62	6.47	6.31	6.16	6.07	5.99	5.91	5.82	5.74	5.65
8	5.81	5.67	5.52	5.36	5.28	5.20	5.12	5.03	4.95	4.86
9	5.26	5.11	4.96	4.81	4.73	4.65	4.57	4.48	4.40	4.31
10	4.85	4.71	4.56	4.41	4.33	4.25	4.17	4.08	4.00	3.91
11	4.54	4.40	4.25	4.10	4.02	3.94	3.86	3.78	3.69	3.60
12	4.30	4.16	4.01	3.86	3.78	3.70	3.62	3.54	3.45	3.36
13	4.10	3.96	3.82	3.67	3.59	3.51	3.43	3.34	3.26	3.17
14	3.94	3.80	3.66	3.51	3.43	3.35	3.27	3.18	3.09	3.00
15	3.81	3.67	3.52	3.37	3.29	3.21	3.13	3.05	2.96	2.87
16	3.69	3.55	3.41	3.26	3.18	3.10	3.02	2.93	2.85	2.75
17	3.59	3.46	3.31	3.16	3.08	3.00	2.92	2.84	2.75	2.65
18	3.51	3.37	3.23	3.08	3.00	2.92	2.84	2.75	2.66	2.57
19	3.43	3.30	3.15	3.00	2.93	2.84	2.76	2.67	2.58	2.49
20	3.37	3.23	3.09	2.94	2.86	2.78	2.70	2.61	2.52	2.42
21	3.31	3.17	3.03	2.88	2.80	2.72	2.64	2.55	2.46	2.36
22	3.26	3.12	2.98	2.83	2.75	2.67	2.58	2.50	2.40	2.31
23	3.21	3.07	2.93	2.78	2.70	2.62	2.54	2.45	2.35	2.26
24	3.17	3.03	2.89	2.74	2.66	2.58	2.49	2.40	2.31	2.21
25	3.13	2.99	2.85	2.70	2.62	2.54	2.45	2.36	2.27	2.17
26	3.09	2.96	2.82	2.66	2.59	2.50	2.42	2.33	2.23	2.13
27	3.06	2.93	2.78	2.63	2.55	2.47	2.38	2.29	2.20	2.10
28	3.03	2.90	2.75	2.60	2.52	2.44	2.35	2.26	2.17	2.06
29	3.01	2.87	2.73	2.57	2.50	2.41	2.33	2.23	2.14	2.03
30	2.98	2.84	2.70	2.55	2.47	2.39	2.30	2.21	2.11	2.01
40	2.80	2.67	2.52	2.37	2.29	2.20	2.11	2.02	1.92	1.81
60	2.63	2.50	2.35	2.20	2.12	2.03	1.94	1.84	1.73	1.60
120	2.47	2.34	2.19	2.04	1.95	1.86	1.76	1.66	1.53	1.38
inf	2.32	2.19	2.04	1.88	1.79	1.70	1.59	1.47	1.33	1.00

اقتران التوزيع الاحتمالي ل U؛ "مان-ويتني" $n_1 \le n_2,\ 3 \le n_2 \le 10$ $P(U \le U_0);$

$n_2 = 3$					
U_0	n_1				
	1		2		3
0	.25		.10		.05
1	.50		.20		.10
2			.40		.20
3			.60		.35
4					.50

$n_2 = 4$				
U_0	n_1			
	1	2	3	4
0	.2000	.0667	.0286	.0143
1	.4000	.1333	.0571	.0286
2	.6000	.2667	.1143	.0571
3		.4000	.2000	.1000
4		.6000	.3143	.1714
5			.4286	.2429
6			.5714	.3429
7				.4429
8				.5571

$n_2 = 5$					
U_0	n_1				
	1	2	3	4	5
0	.1667	.0476	.0179	.0079	.0040
1	.3333	.0952	.0357	.0159	.0079
2	.5000	.1905	.0714	.0317	.0159
3		.2857	.1250	.0556	.0278
4		.4286	.1964	.0952	.0476
5		.5714	.2857	.1429	.0754
6			.3929	.2063	.1111
7			.5000	.2778	.1548
8				.3651	.2103
9				.4524	.2738
10				.5476	.3452
11					.4206
12					.5000

اقتران التوزيع الاحتمالي ل U؛ "مان-ويتني"

$n_2 = 6$						
U_0	n_1					
	1	2	3	4	5	6
0	.1429	.0357	.0119	.0048	.0022	.0011
1	.2857	.0714	.0238	.0095	.0043	.0022
2	.4286	.1429	.0476	.0190	.0087	.0043
3	.5714	.2143	.0833	.0333	.0152	.0076
4		.3214	.1310	.0571	.0260	.0130
5		.4286	.1905	.0857	.0411	.0206
6		.5714	.2738	.1286	.0628	.0325
7			.3571	.1762	.0887	.0465
8			.4524	.2381	.1234	.0660
9			.5476	.3048	.1645	.0898
10				.3810	.2143	.1201
11				.4571	.2684	.1548
12				.5429	.3312	.1970
13					.3961	.2424
14					.4654	.2944
15					.5346	.3496
16						.4091
17						.4686
18						.5314

$n_2 = 7$							
U_0	n_1						
	1	2	3	4	5	6	7
0	.1250	.0278	.0083	.0030	.0013	.0006	.0003
1	.2500	.0556	.0167	.0061	.0025	.0012	.0006
2	.3750	.1111	.0333	.0121	.0051	.0023	.0012
3	.5000	.1667	.0583	.0212	.0088	.0041	.0020
4		.2500	.0917	.0364	.0152	.0070	.0035
5		.3333	.1333	.0545	.0240	.0111	.0055
6		.4444	.1917	.0818	.0366	.0175	.0087
7		.5556	.2583	.1152	.0530	.0256	.0131
8			.3333	.1576	.0745	.0367	.0189
9			.4167	.2061	.1010	.0507	.0265
10			.5000	.2636	.1338	.0688	.0364
11				.3242	.1717	.0903	.0487
12				.3939	.2159	.1171	.0641
13				.4636	.2652	.1474	.0825
14				.5364	.3194	.1830	.1043
15					.3775	.2226	.1297
16					.4381	.2669	.1588
17					.5000	.3141	.1914
18						.3654	.2279
19						.4178	.2675
20						.4726	.3100
21						.5274	.3552
22							.4024
23							.4508
24							.5000

اقتران التوزيع الاحتمالي ل U؛ "مان-ويتني"

$n_2 = 8$								
U_0	n_1							
	1	2	3	4	5	6	7	8
0	.1111	.0222	.0061	.0020	.0008	.0003	.0002	.0001
1	.2222	.0444	.0121	.0040	.0016	.0007	.0003	.0002
2	.3333	.0889	.0242	.0081	.0031	.0013	.0006	.0003
3	.4444	.1333	.0424	.0141	.0054	.0023	.0011	.0005
4	.5556	.2000	.0667	.0242	.0093	.0040	.0019	.0009
5		.2667	.0970	.0364	.0148	.0063	.0030	.0015
6		.3556	.1394	.0545	.0225	.0100	.0047	.0023
7		.4444	.1879	.0768	.0326	.0147	.0070	.0035
8		.5556	.2485	.1071	.0466	.0213	.0103	.0052
9			.3152	.1414	.0637	.0296	.0145	.0074
10			.3879	.1838	.0855	.0406	.0200	.0103
11			.4606	.2303	.1111	.0539	.0270	.0141
12			.5394	.2848	.1422	.0709	.0361	.0190
13				.3414	.1772	.0906	.0469	.0249
14				.4040	.2176	.1142	.0603	.0325
15				.4667	.2618	.1412	.0760	.0415
16				.5333	.3108	.1725	.0946	.0524
17					.3621	.2068	.1159	.0652
18					.4165	.2454	.1405	.0803
19					.4716	.2864	.1678	.0974
20					.5284	.3310	.1984	.1172
21						.3773	.2317	.1393
22						.4259	.2679	.1641
23						.4749	.3063	.1911
24						.5251	.3472	.2209
25							.3894	.2527
26							.4333	.2869
27							.4775	.3227
28							.5225	.3605
29								.3992
30								.4392
31								.4796
32								.5204

اقتران التوزيع الاحتمالي ل U؛ "مان-ويتني"

$n_2 = 9$									
U_0	n_1								
	1	2	3	4	5	6	7	8	9
0	.1000	.0182	.0045	.0014	.0005	.0002	.0001	.0000	.0000
1	.2000	.0364	.0091	.0028	.0010	.0004	.0002	.0001	.0000
2	.3000	.0727	.0182	.0056	.0020	.0008	.0003	.0002	.0001
3	.4000	.1091	.0318	.0098	.0035	.0014	.0006	.0003	.0001
4	.5000	.1636	.0500	.0168	.0060	.0024	.0010	.0005	.0002
5		.2182	.0727	.0252	.0095	.0038	.0017	.0008	.0004
6		.2909	.1045	.0378	.0145	.0060	.0026	.0012	.0006
7		.3636	.1409	.0531	.0210	.0088	.0039	.0019	.0009
8		.4545	.1864	.0741	.0300	.0128	.0058	.0028	.0014
9		.5455	.2409	.0993	.0415	.0180	.0082	.0039	.0020
10			.3000	.1301	.0559	.0248	.0115	.0056	.0028
11			.3636	.1650	.0734	.0332	.0156	.0076	.0039
12			.4318	.2070	.0949	.0440	.0209	.0103	.0053
13			.5000	.2517	.1199	.0567	.0274	.0137	.0071
14				.3021	.1489	.0723	.0356	.0180	.0094
15				.3552	.1818	.0905	.0454	.0232	.0122
16				.4126	.2188	.1119	.0571	.0296	.0157
17				.4699	.2592	.1361	.0708	.0372	.0200
18				.5301	.3032	.1638	.0869	.0464	.0252
19					.3497	.1942	.1052	.0570	.0313
20					.3986	.2280	.1261	.0694	.0385
21					.4491	.2643	.1496	.0836	.0470
22					.5000	.3035	.1755	.0998	.0567
23						.3445	.2039	.1179	.0680
24						.3878	.2349	.1383	.0807
25						.4320	.2680	.1606	.0951
26						.4773	.3032	.1852	.1112
27						.5227	.3403	.2117	.1290
28							.3788	.2404	.1487
29							.4185	.2707	.1701
30							.4591	.3029	.1933
31							.5000	.3365	.2181
32								.3715	.2447
33								.4074	.2729
34								.4442	.3024
35								.4813	.3332
36								.5187	.3652
37									.3981
38									.4317
39									.4657
40									.5000

اقتران التوزيع الاحتمالي ل U؛ "مان-ويتني"

$n_2 = 10$										
U_0	n_1									
	1	2	3	4	5	6	7	8	9	10
0	.0909	.0152	.0035	.0010	.0003	.0001	.0001	.0000	.0000	.0000
1	.1818	.0303	.0070	.0020	.0007	.0002	.0001	.0000	.0000	.0000
2	.2727	.0606	.0140	.0040	.0013	.0005	.0002	.0001	.0000	.0000
3	.3636	.0909	.0245	.0070	.0023	.0009	.0004	.0002	.0001	.0000
4	.4545	.1364	.0385	.0120	.0040	.0015	.0006	.0003	.0001	.0001
5	.5455	.1818	.0559	.0180	.0063	.0024	.0010	.0004	.0002	.0001
6		.2424	.0804	.0270	.0097	.0037	.0015	.0007	.0003	.0002
7		.3030	.1084	.0380	.0140	.0055	.0023	.0010	.0005	.0002
8		.3788	.1434	.0529	.0200	.0080	.0034	.0015	.0007	.0004
9		.4545	.1853	.0709	.0276	.0112	.0048	.0022	.0011	.0005
10		.5455	.2343	.0939	.0376	.0156	.0068	.0031	.0015	.0008
11			.2867	.1199	.0496	.0210	.0093	.0043	.0021	.0010
12			.3462	.1518	.0646	.0280	.0125	.0058	.0028	.0014
13			.4056	.1868	.0823	.0363	.0165	.0078	.0038	.0019
14			.4685	.2268	.1032	.0467	.0215	.0103	.0051	.0026
15			.5315	.2697	.1272	.0589	.0277	.0133	.0066	.0034
16				.3177	.1548	.0736	.0351	.0171	.0086	.0045
17				.3666	.1855	.0903	.0439	.0217	.0110	.0057
18				.4196	.2198	.1099	.0544	.0273	.0140	.0073
19				.4725	.2567	.1317	.0665	.0338	.0175	.0093
20				.5275	.2970	.1566	.0806	.0416	.0217	.0116
21					.3393	.1838	.0966	.0506	.0267	.0144
22					.3839	.2139	.1148	.0610	.0326	.0177
23					.4296	.2461	.1349	.0729	.0394	.0216
24					.4765	.2811	.1574	.0864	.0474	.0262
25					.5235	.3177	.1819	.1015	.0564	.0315
26						.3564	.2087	.1185	.0667	.0376
27						.3962	.2374	.1371	.0782	.0446
28						.4374	.2681	.1577	.0912	.0526
29						.4789	.3004	.1800	.1055	.0615
30						.5211	.3345	.2041	.1214	.0716
31							.3698	.2299	.1388	.0827
32							.4063	.2574	.1577	.0952
33							.4434	.2863	.1781	.1088
34							.4811	.3167	.2001	.1237
35							.5189	.3482	.2235	.1399
36								.3809	.2483	.1575
37								.4143	.2745	.1763
38								.4484	.3019	.1965
39								.4827	.3304	.2179
40								.5173	.3598	.2406
41									.3901	.2644
42									.4211	.2894
43									.4524	.3153
44									.4841	.3421
45									.5159	.3697
46										.3980
47										.4267
48										.4559
49										.4853
50										.5147

Wilcoxon Signed-Rank Statistic

$$P = P(T^+ \geq x) = P(T^+ \leq x)$$

$n = 3$			$n = 4$			$n = 5$			$n = 6$		
x	P	x^*	x	P	x^*	x	P	x^*	x	P	x^*
5	0.250	1	8	0.188	2	12	0.156	3	17	0.109	4
6	0.125	0	9	0.125	1	13	0.094	2	18	0.078	3
7	0.000		10	0.062	0	14	0.062	1	19	0.047	2
			11	0.000		15	0.031	0	20	0.031	1
						16	0.000		21	0.016	0
									22	0.000	

$n = 7$			$n = 8$			$n = 9$			$n = 10$		
x	P	x^*	x	P	x^*	x	P	x^*	x	P	x^*
22	0.109	6	27	0.125	9	34	0.102	11	40	0.116	15
23	0.078	5	28	0.098	8	35	0.082	10	41	0.097	14
24	0.055	4	29	0.074	7	36	0.064	9	42	0.080	13
25	0.039	3	30	0.055	6	37	0.049	8	43	0.065	12
26	0.023	2	31	0.039	5	38	0.037	7	44	0.053	11
27	0.016	1	32	0.027	4	39	0.027	6	45	0.042	10
28	0.008	0	33	0.020	3	40	0.020	5	46	0.032	9
			34	0.012	2	41	0.014	4	47	0.024	8
			35	0.008	1	42	0.010	3	48	0.019	7
									49	0.014	6
									50	0.010	5

Wilcoxon Signed-Rank Statistic …continued

$n = 11$			$n = 12$			$n = 13$			$n = 14$		
x	P	x^*	x	P	x^*	x	P	x^*	x	P	x^*
48	0.103	18	56	0.102	22	64	0.108	27	73	0.108	32
49	0.087	17	57	0.088	21	65	0.095	26	74	0.097	31
50	0.074	16	58	0.076	20	66	0.084	25	75	0.086	30
51	0.062	15	59	0.065	19	67	0.073	24	76	0.077	29
52	0.051	14	60	0.055	18	68	0.064	23	77	0.068	28
53	0.042	13	61	0.046	17	69	0.055	22	78	0.059	27
54	0.034	12	62	0.039	16	70	0.047	21	79	0.052	26
55	0.027	11	63	0.032	15	71	0.040	20	80	0.045	25
56	0.021	10	64	0.026	14	72	0.034	19	81	0.039	24
57	0.016	9	65	0.021	13	73	0.029	18	82	0.034	23
58	0.012	8	66	0.017	12	74	0.024	17	83	0.029	22
59	0.009	7	67	0.013	11	75	0.020	16	84	0.025	21
			68	0.010	10	76	0.016	15	85	0.021	20
						77	0.013	14	86	0.018	19
						78	0.011	13	87	0.015	18
						79	0.009	12	88	0.012	17
									89	0.010	16

$n = 15$		
x	P	x^*
83	0.104	37
84	0.094	36
85	0.084	35
86	0.076	34
87	0.068	33
88	0.060	32
89	0.053	31
90	0.047	30
91	0.042	29
92	0.036	28
93	0.032	27
94	0.028	26
95	0.024	25
96	0.021	24
97	0.018	23
98	0.015	22
99	0.013	21
100	0.011	20
101	0.009	19

توزيع المجموع الكلي للمتتابعات R في العينات التي حجمها (n_1, n_2) حيث $P(R \leq a)$

	a								
(n_1, n_2)	2	3	4	5	6	7	8	9	10
(2,3)	0.200	0.500	0.900	1.000					
(2,4)	0.133	0.400	0.800	1.000					
(2,5)	0.095	0.333	0.714	1.000					
(2,6)	0.071	0.286	0.643	1.000					
(2,7)	0.056	0.250	0.583	1.000					
(2,8)	0.044	0.222	0.533	1.000					
(2,9)	0.036	0.200	0.491	1.000					
(2,10)	0.030	0.182	0.455	1.000					
(3,3)	0.100	0.300	0.700	0.900	1.000				
(3,4)	0.057	0.200	0.543	0.800	0.971	1.000			
(3,5)	0.036	0.143	0.429	0.714	0.929	1.000			
(3,6)	0.024	0.107	0.345	0.643	0.881	1.000			
(3,7)	0.017	0.083	0.283	0.583	0.833	1.000			
(3,8)	0.012	0.067	0.236	0.533	0.788	1.000			
(3,9)	0.009	0.055	0.200	0.491	0.745	1.000			
(3,10)	0.007	0.045	0.171	0.455	0.706	1.000			
(4,4)	0.029	0.114	0.371	0.629	0.886	0.971	1.000		
(4,5)	0.016	0.071	0.262	0.500	0.786	0.929	0.992	1.000	
(4,6)	0.010	0.048	0.190	0.405	0.690	0.881	0.976	1.000	
(4,7)	0.006	0.033	0.142	0.333	0.606	0.833	0.954	1.000	
(4,8)	0.004	0.024	0.109	0.279	0.533	0.788	0.929	1.000	
(4,9)	0.003	0.018	0.085	0.236	0.471	0.745	0.902	1.000	
(4,10)	0.002	0.014	0.068	0.203	0.419	0.706	0.874	1.000	
(5,5)	0.008	0.040	0.167	0.357	0.643	0.833	0.96	0.992	1.000
(5,6)	0.004	0.024	0.110	0.262	0.522	0.738	0.911	0.976	0.998
(5,7)	0.003	0.015	0.076	0.197	0.424	0.652	0.854	0.955	0.992
(5,8)	0.002	0.010	0.054	0.152	0.347	0.576	0.793	0.929	0.984
(5,9)	0.001	0.007	0.039	0.119	0.287	0.510	0.734	0.902	0.972
(5,10)	0.001	0.005	0.029	0.095	0.239	0.455	0.678	0.874	0.958
(6,6)	0.002	0.013	0.067	0.175	0.392	0.608	0.825	0.933	0.987
(6,7)	0.001	0.008	0.043	0.121	0.296	0.500	0.733	0.879	0.966
(6,8)	0.001	0.005	0.028	0.086	0.226	0.413	0.646	0.821	0.937
(6,9)	0.000	0.003	0.019	0.063	0.175	0.343	0.566	0.762	0.902
(6,10)	0.000	0.002	0.013	0.047	0.137	0.288	0.497	0.706	0.864
(7,7)	0.001	0.004	0.025	0.078	0.209	0.383	0.617	0.791	0.922
(7,8)	0.000	0.002	0.015	0.051	0.149	0.296	0.514	0.704	0.867
(7,9)	0.000	0.001	0.010	0.035	0.108	0.231	0.427	0.622	0.806
(7,10)	0.000	0.001	0.006	0.024	0.080	0.182	0.355	0.549	0.743
(8,8)	0.000	0.001	0.009	0.032	0.100	0.214	0.405	0.595	0.786
(8,9)	0.000	0.001	0.005	0.020	0.069	0.157	0.319	0.500	0.702
(8,10)	0.000	0.000	0.003	0.013	0.048	0.117	0.251	0.419	0.621
(9,9)	0.000	0.000	0.003	0.012	0.044	0.109	0.238	0.399	0.601
(9,10)	0.000	0.000	0.002	0.008	0.029	0.077	0.179	0.319	0.510
(10,10)	0.000	0.000	0.001	0.004	0.019	0.051	0.128	0.242	0.414

يتبع توزيع المجموع الكلي للمتتابعات

a										
(n_1, n_2)	11	12	13	14	15	16	17	18	19	20
(2,3)										
(2,4)										
(2,5)										
2,6)										
(2,7)										
(2,8)										
(2,9)										
(2,10)										
(3,3)										
(3,4)										
(3,5)										
(3,6)										
(3,7)										
(3,8)										
(3,9)										
(3,10)										
(4,4)										
(4,5)										
(4,6)										
(4,7)										
(4,8)										
(4,9)										
(4,10)										
(5,5)										
(5,6)	1.000									
(5,7)	1.000									
(5,8)	1.000									
(5,9)	1.000									
(5,10)	1.000									
(6,6)	0.998	1.000								
(6,7)	0.992	0.999	1.000							
(6,8)	0.984	0.998	1.000							
(6,9)	0.972	0.994	1.000							
(6,10)	0.958	0.990	1.000							
(7,7)	0.975	0.996	0.999	1.000						
(7,8)	0.949	0.988	0.998	1.000	1.000					
(7,9)	0.916	0.975	0.994	0.999	1.000					
(7,10)	0.879	0.957	0.990	0.998	1.000					
(8,8)	0.900	0.968	0.991	0.999	1.000	1.000				
(8,9)	0.843	0.939	0.980	0.996	0.999	1.000	1.000			
(8,10)	0.782	0.903	0.964	0.990	0.998	1.000	1.000			
(9,9)	0.762	0.891	0.956	0.988	0.997	1.000	1.000	1.000		
(9,10)	0.681	0.834	0.923	0.974	0.992	0.999	1.000	1.000	1.000	
(10,10)	0.586	0.758	0.872	0.949	0.981	0.996	0.999	1.000	1.000	1.000

القيم الحرجة لمعامل ارتباط الرتب (سبيرمان)

	One-tail area			
	α =0.05	α =0.025	α =0.01	α =0.005
	Two-tails area			
n	α = 0.1	α = 0.05	α = 0.02	α =0.01
5	0.900	--	--	--
6	0.829	0.886	0.943	--
7	0.714	0.786	0.893	--
8	0.643	0.738	0.833	0.881
9	0.600	0.683	0.783	0.833
10	0.564	0.648	0.745	0.794
11	0.523	0.623	0.736	0.818
12	0.497	0.591	0.703	0.780
13	0.475	0.566	0.673	0.745
14	0.457	0.545	0.646	0.716
15	0.441	0.525	0.623	0.689
16	0.425	0.507	0.601	0.666
17	0.412	0.490	0.582	0.645
18	0.399	0.476	0.564	0.625
19	0.388	0.462	0.549	0.608
20	0.377	0.450	0.534	0.591
21	0.368	0.438	0.521	0.576
22	0.359	0.428	0.508	0.562
23	0.351	0.418	0.496	0.549
24	0.343	0.409	0.485	0.537
25	0.336	0.400	0.475	0.526
26	0.329	0.392	0.465	0.515
27	0.323	0.385	0.456	0.505
28	0.317	0.377	0.448	0.496
29	0.311	0.370	0.440	0.487
30	0.305	0.364	0.432	0.478

نهاية الجداول الإحصائية