

A Häufig angewandte Testverfahren, α vorgegeben

(Hypothetische) Frage, die durch das Verfahren beantwortet werden soll	Zu vergleichende statistische Kenngrößen (Verteilungsvoraussetzung)	Nullhypothese H_0	Testfunktion T	Testverteilung T/H_0	Entscheidungsregel zur Ablehnung von H_0 bei gegebenem α , z.B. $\alpha = 0,05$
Kann eine Stichprobe gemessen am arithmetischen Mittel aus einer bestimmten Grundgesamtheit stammen?	\bar{X} und μ_0 bei bekanntem σ ($X \sim N(\mu, \sigma^2)$) \bar{X} und μ_0 bei unbekanntem σ ($n > 30$: X bel. vert.)	$H_0: \mu = \mu_0$ ($H_0: \mu \leq \mu_0$ $H_0: \mu \geq \mu_0$) $H_0: \mu = \mu_0$ ($H_0: \mu \leq \mu_0$ $H_0: \mu \geq \mu_0$)	$\frac{\bar{X} - \mu_0}{\sigma} \sqrt{n}$ $\frac{\bar{X} - \mu_0}{S} \sqrt{n}$	$N(0, 1)$ $t(n-1)$ bei $n > 30$ $N(0, 1)$	$ t > z_{1-\alpha/2}$ ($t > z_{1-\alpha}$ $t < -z_{1-\alpha}$) $ t > t_{1-\alpha/2}$ $ t > z_{1-\alpha/2}$ ($t > t_{1-\alpha}, t > z_{1-\alpha}$ $t < -t_{1-\alpha}, t < -z_{1-\alpha}$)
Unterscheiden sich zwei Stichproben oder stammen sie aus derselben Grundgesamtheit? ($g=1,2$)	\bar{X}_1 und \bar{X}_2 mit $\sigma_1^2 = \sigma_2^2 =: \sigma^2$, aber unbekannt ($n_g > 30$: X_g bel. vert.)	$H_0: \mu_1 = \mu_2$ ($H_0: \mu_1 \leq \mu_2$ $H_0: \mu_1 \geq \mu_2$)	$\frac{\bar{X}_1 - \bar{X}_2}{\hat{\sigma} \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$ $\hat{\sigma}^2 = \frac{(n_1-1)S_1^2 + (n_2-1)S_2^2}{n_1 + n_2 - 2}$	$t(n_1 + n_2 - 2)$ bei $n_1, n_2 > 30$ $N(0, 1)$	$ t > t_{1-\alpha/2}$ $ t > z_{1-\alpha/2}$ ($t > t_{1-\alpha}, t > z_{1-\alpha}$ $t < -t_{1-\alpha}, t < -z_{1-\alpha}$)
Unterscheiden sich mindestens zwei Stichproben beim Vergleich von r Stichproben? ($g=1, \dots, r$)	$\bar{X}_1, \bar{X}_2, \dots, \bar{X}_r$ mit $\sigma_1^2 = \sigma_2^2 = \dots = \sigma_r^2$, aber unbekannt ($X_g \sim N(\mu_g, \sigma_g^2)$)	$H_0: \mu_1 = \mu_2 = \dots = \mu_r$	$\frac{S_{\text{ext}}^2}{r-1} = \frac{\sum_{g=1}^r n_g (\bar{X}_g - \bar{X})^2}{r-1}$ $\frac{S_{\text{int}}^2}{n-r} = \frac{\sum_{g=1}^r \sum_{i=1}^{n_g} (X_{gi} - \bar{X}_g)^2}{n-r}$	$f(r-1, n-r)$ mit $n = \sum_{g=1}^r n_g$	$t > f_{1-\alpha}$
Kann eine Stichprobe gemessen an der Varianz aus einer beliebigen Grundgesamtheit stammen?	S^2 und σ_0^2 mit μ unbekannt ($X \sim N(\mu, \sigma^2)$)	$H_0: \sigma^2 = \sigma_0^2$	$\frac{(n-1)S^2}{\sigma_0^2}$	$\chi^2(n-1)$	$t > \chi_{1-\alpha}^2$
Unterscheiden sich zwei Stichproben bezüglich der Varianz?	S_1^2 und S_2^2 ($X_1 \sim N(\mu_1, \sigma_1^2)$ $X_2 \sim N(\mu_2, \sigma_2^2)$)	$H_0: \sigma_1^2 = \sigma_2^2$	$\frac{S_1^2}{S_2^2}$	$f(n_1-1, n_2-1)$	$t > f_{1-\alpha}$
Sind zwei Merkmale statistisch verbunden?	h_{ij} und h_{ij}^e in einer Kreuztabelle mit m Zeilen und k Spalten	$H_0: \pi_{ij} = \pi_{ij}^e$	$\sum_{i=1}^m \sum_{j=1}^k \frac{(h_{ij} - h_{ij}^e)^2}{h_{ij}^e}$	$\chi^2(m-1)(k-1)$	$t > \chi_{1-\alpha}^2$ (h_{ij}^e sollte größer als 5 sein)

B Standardnormalverteilung

Vertafelt sind die Werte der Verteilungsfunktion $\Phi(z) = P(Z \leq z)$ für $z \geq 0$.

z	0,00	0,01	0,02	0,03	0,04	0,05	0,06	0,07	0,08	0,09
0,0	0,5000	0,5040	0,5080	0,5120	0,5160	0,5199	0,5239	0,5279	0,5319	0,5359
0,1	0,5398	0,5438	0,5478	0,5517	0,5557	0,5596	0,5636	0,5675	0,5714	0,5753
0,2	0,5793	0,5832	0,5871	0,5910	0,5948	0,5987	0,6026	0,6064	0,6103	0,6141
0,3	0,6179	0,6217	0,6255	0,6293	0,6331	0,6368	0,6406	0,6443	0,6480	0,6517
0,4	0,6554	0,6591	0,6628	0,6664	0,6700	0,6736	0,6772	0,6808	0,6844	0,6879
0,5	0,6915	0,6950	0,6985	0,7019	0,7054	0,7088	0,7123	0,7157	0,7190	0,7224
0,6	0,7257	0,7291	0,7324	0,7357	0,7389	0,7422	0,7454	0,7486	0,7517	0,7549
0,7	0,7580	0,7611	0,7642	0,7673	0,7704	0,7734	0,7764	0,7794	0,7823	0,7852
0,8	0,7881	0,7910	0,7939	0,7967	0,7995	0,8023	0,8051	0,8078	0,8106	0,8133
0,9	0,8159	0,8186	0,8212	0,8238	0,8264	0,8289	0,8315	0,8340	0,8365	0,8389
1,0	0,8413	0,8438	0,8461	0,8485	0,8508	0,8531	0,8554	0,8577	0,8599	0,8621
1,1	0,8643	0,8665	0,8686	0,8708	0,8729	0,8749	0,8770	0,8790	0,8810	0,8830
1,2	0,8849	0,8869	0,8888	0,8907	0,8925	0,8944	0,8962	0,8980	0,8997	0,9015
1,3	0,9032	0,9049	0,9066	0,9082	0,9099	0,9115	0,9131	0,9147	0,9162	0,9177
1,4	0,9192	0,9207	0,9222	0,9236	0,9251	0,9265	0,9279	0,9292	0,9306	0,9319
1,5	0,9332	0,9345	0,9357	0,9370	0,9382	0,9394	0,9406	0,9418	0,9429	0,9441
1,6	0,9452	0,9463	0,9474	0,9484	0,9495	0,9505	0,9515	0,9525	0,9535	0,9545
1,7	0,9554	0,9564	0,9573	0,9582	0,9591	0,9599	0,9608	0,9616	0,9625	0,9633
1,8	0,9641	0,9649	0,9656	0,9664	0,9671	0,9678	0,9686	0,9693	0,9699	0,9706
1,9	0,9713	0,9719	0,9726	0,9732	0,9738	0,9744	0,9750	0,9756	0,9761	0,9767
2,0	0,9772	0,9778	0,9783	0,9788	0,9793	0,9798	0,9803	0,9808	0,9812	0,9817
2,1	0,9821	0,9826	0,9830	0,9834	0,9838	0,9842	0,9846	0,9850	0,9854	0,9857
2,2	0,9861	0,9864	0,9868	0,9871	0,9875	0,9878	0,9881	0,9884	0,9887	0,9890
2,3	0,9893	0,9896	0,9898	0,9901	0,9904	0,9906	0,9909	0,9911	0,9913	0,9916
2,4	0,9918	0,9920	0,9922	0,9925	0,9927	0,9929	0,9931	0,9932	0,9934	0,9936
2,5	0,9938	0,9940	0,9941	0,9943	0,9945	0,9946	0,9948	0,9949	0,9951	0,9952
2,6	0,9953	0,9955	0,9956	0,9957	0,9959	0,9960	0,9961	0,9962	0,9963	0,9964
2,7	0,9965	0,9966	0,9967	0,9968	0,9969	0,9970	0,9971	0,9972	0,9973	0,9974
2,8	0,9974	0,9975	0,9976	0,9977	0,9977	0,9978	0,9979	0,9979	0,9980	0,9981
2,9	0,9981	0,9982	0,9982	0,9983	0,9984	0,9984	0,9985	0,9985	0,9986	0,9986
3,0	0,9987	0,9987	0,9987	0,9988	0,9988	0,9989	0,9989	0,9989	0,9990	0,9990
3,1	0,9990	0,9991	0,9991	0,9991	0,9992	0,9992	0,9992	0,9992	0,9993	0,9993
3,2	0,9993	0,9993	0,9994	0,9994	0,9994	0,9994	0,9994	0,9995	0,9995	0,9995
3,3	0,9995	0,9995	0,9995	0,9996	0,9996	0,9996	0,9996	0,9996	0,9996	0,9997
3,4	0,9997	0,9997	0,9997	0,9997	0,9997	0,9997	0,9997	0,9997	0,9997	0,9998
3,5	0,9998	0,9998	0,9998	0,9998	0,9998	0,9998	0,9998	0,9998	0,9998	0,9998
3,6	0,9998	0,9998	0,9999	0,9999	0,9999	0,9999	0,9999	0,9999	0,9999	0,9999
3,7	0,9999	0,9999	0,9999	0,9999	0,9999	0,9999	0,9999	0,9999	0,9999	0,9999
3,8	0,9999	0,9999	0,9999	0,9999	0,9999	0,9999	0,9999	0,9999	0,9999	0,9999
3,9	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000

C *t*-Verteilung

Vertafelt sind die Werte von t zu gegebenen Werten der Verteilungsfunktion für ν Freiheitsgrade. Für $t_{1-\alpha}(\nu)$ gilt $F(t_{1-\alpha}(\nu)) = 1 - \alpha$.

ν	$1 - \alpha$									
	0,600	0,700	0,750	0,800	0,900	0,950	0,975	0,990	0,995	0,999
1	0,325	0,727	1,000	1,376	3,078	6,314	12,706	31,821	63,656	318,289
2	0,289	0,617	0,816	1,061	1,886	2,920	4,303	6,965	9,925	22,328
3	0,277	0,584	0,765	0,978	1,638	2,353	3,182	4,541	5,841	10,214
4	0,271	0,569	0,741	0,941	1,533	2,132	2,776	3,747	4,604	7,173
5	0,267	0,559	0,727	0,920	1,476	2,015	2,571	3,365	4,032	5,894
6	0,265	0,553	0,718	0,906	1,440	1,943	2,447	3,143	3,707	5,208
7	0,263	0,549	0,711	0,896	1,415	1,895	2,365	2,998	3,499	4,785
8	0,262	0,546	0,706	0,889	1,397	1,860	2,306	2,896	3,355	4,501
9	0,261	0,543	0,703	0,883	1,383	1,833	2,262	2,821	3,250	4,297
10	0,260	0,542	0,700	0,879	1,372	1,812	2,228	2,764	3,169	4,144
11	0,260	0,540	0,697	0,876	1,363	1,796	2,201	2,718	3,106	4,025
12	0,259	0,539	0,695	0,873	1,356	1,782	2,179	2,681	3,055	3,930
13	0,259	0,538	0,694	0,870	1,350	1,771	2,160	2,650	3,012	3,852
14	0,258	0,537	0,692	0,868	1,345	1,761	2,145	2,624	2,977	3,787
15	0,258	0,536	0,691	0,866	1,341	1,753	2,131	2,602	2,947	3,733
16	0,258	0,535	0,690	0,865	1,337	1,746	2,120	2,583	2,921	3,686
17	0,257	0,534	0,689	0,863	1,333	1,740	2,110	2,567	2,898	3,646
18	0,257	0,534	0,688	0,862	1,330	1,734	2,101	2,552	2,878	3,610
19	0,257	0,533	0,688	0,861	1,328	1,729	2,093	2,539	2,861	3,579
20	0,257	0,533	0,687	0,860	1,325	1,725	2,086	2,528	2,845	3,552
21	0,257	0,532	0,686	0,859	1,323	1,721	2,080	2,518	2,831	3,527
22	0,256	0,532	0,686	0,858	1,321	1,717	2,074	2,508	2,819	3,505
23	0,256	0,532	0,685	0,858	1,319	1,714	2,069	2,500	2,807	3,485
24	0,256	0,531	0,685	0,857	1,318	1,711	2,064	2,492	2,797	3,467
25	0,256	0,531	0,684	0,856	1,316	1,708	2,060	2,485	2,787	3,450
26	0,256	0,531	0,684	0,856	1,315	1,706	2,056	2,479	2,779	3,435
27	0,256	0,531	0,684	0,855	1,314	1,703	2,052	2,473	2,771	3,421
28	0,256	0,530	0,683	0,855	1,313	1,701	2,048	2,467	2,763	3,408
29	0,256	0,530	0,683	0,854	1,311	1,699	2,045	2,462	2,756	3,396
30	0,256	0,530	0,683	0,854	1,310	1,697	2,042	2,457	2,750	3,385
40	0,255	0,529	0,681	0,851	1,303	1,684	2,021	2,423	2,704	3,307
50	0,255	0,528	0,679	0,849	1,299	1,676	2,009	2,403	2,678	3,261
100	0,254	0,526	0,677	0,845	1,290	1,660	1,984	2,364	2,626	3,174
150	0,254	0,526	0,676	0,844	1,287	1,655	1,976	2,351	2,609	3,145
∞	0,253	0,524	0,674	0,842	1,282	1,645	1,960	2,326	2,576	3,090

D Chi-Quadrat-Verteilung

Vertafelt sind die Werte von χ^2 zu gegebenen Werten der Verteilungsfunktion für ν Freiheitsgrade. Für $\chi^2_{1-\alpha}(\nu)$ gilt $F(\chi^2_{1-\alpha}(\nu)) = 1 - \alpha$. Approximation für $\nu > 35$: $\chi^2_{1-\alpha}(\nu) \approx \frac{1}{2}(z_{1-\alpha} + \sqrt{2\nu - 1})^2$.

ν	$1 - \alpha$									
	0,001	0,005	0,010	0,025	0,050	0,100	0,200	0,300	0,400	0,500
1	0,000	0,000	0,000	0,001	0,004	0,016	0,064	0,148	0,275	0,455
2	0,002	0,010	0,020	0,051	0,103	0,211	0,446	0,713	1,022	1,386
3	0,024	0,072	0,115	0,216	0,352	0,584	1,005	1,424	1,869	2,366
4	0,091	0,207	0,297	0,484	0,711	1,064	1,649	2,195	2,753	3,357
5	0,210	0,412	0,554	0,831	1,145	1,610	2,343	3,000	3,656	4,351
6	0,381	0,676	0,872	1,237	1,635	2,204	3,070	3,828	4,570	5,348
7	0,599	0,989	1,239	1,690	2,167	2,833	3,822	4,671	5,493	6,346
8	0,857	1,344	1,647	2,180	2,733	3,490	4,594	5,527	6,423	7,344
9	1,152	1,735	2,088	2,700	3,325	4,168	5,380	6,393	7,357	8,343
10	1,479	2,156	2,558	3,247	3,940	4,865	6,179	7,267	8,295	9,342
11	1,834	2,603	3,053	3,816	4,575	5,578	6,989	8,148	9,237	10,341
12	2,214	3,074	3,571	4,404	5,226	6,304	7,807	9,034	10,182	11,340
13	2,617	3,565	4,107	5,009	5,892	7,041	8,634	9,926	11,129	12,340
14	3,041	4,075	4,660	5,629	6,571	7,790	9,467	10,821	12,078	13,339
15	3,483	4,601	5,229	6,262	7,261	8,547	10,307	11,721	13,030	14,339
16	3,942	5,142	5,812	6,908	7,962	9,312	11,152	12,624	13,983	15,338
17	4,416	5,697	6,408	7,564	8,672	10,085	12,002	13,531	14,937	16,338
18	4,905	6,265	7,015	8,231	9,390	10,865	12,857	14,440	15,893	17,338
19	5,407	6,844	7,633	8,907	10,117	11,651	13,716	15,352	16,850	18,338
20	5,921	7,434	8,260	9,591	10,851	12,443	14,578	16,266	17,809	19,337
21	6,447	8,034	8,897	10,283	11,591	13,240	15,445	17,182	18,768	20,337
22	6,983	8,643	9,542	10,982	12,338	14,041	16,314	18,101	19,729	21,337
23	7,529	9,260	10,196	11,689	13,091	14,848	17,187	19,021	20,690	22,337
24	8,085	9,886	10,856	12,401	13,848	15,659	18,062	19,943	21,652	23,337
25	8,649	10,520	11,524	13,120	14,611	16,473	18,940	20,867	22,616	24,337
26	9,222	11,160	12,198	13,844	15,379	17,292	19,820	21,792	23,579	25,336
27	9,803	11,808	12,878	14,573	16,151	18,114	20,703	22,719	24,544	26,336
28	10,391	12,461	13,565	15,308	16,928	18,939	21,588	23,647	25,509	27,336
29	10,986	13,121	14,256	16,047	17,708	19,768	22,475	24,577	26,475	28,336
30	11,588	13,787	14,953	16,791	18,493	20,599	23,364	25,508	27,442	29,336
31	12,196	14,458	15,655	17,539	19,281	21,434	24,255	26,440	28,409	30,336
32	12,810	15,134	16,362	18,291	20,072	22,271	25,148	27,373	29,376	31,336
33	13,431	15,815	17,073	19,047	20,867	23,110	26,042	28,307	30,344	32,336
34	14,057	16,501	17,789	19,806	21,664	23,952	26,938	29,242	31,313	33,336
35	14,688	17,192	18,509	20,569	22,465	24,797	27,836	30,178	32,282	34,336

v	1 - α									
	0,600	0,700	0,800	0,900	0,950	0,975	0,980	0,990	0,995	0,999
1	0,708	1,074	1,642	2,706	3,841	5,024	5,412	6,635	7,879	10,827
2	1,833	2,408	3,219	4,605	5,991	7,378	7,824	9,210	10,597	13,815
3	2,946	3,665	4,642	6,251	7,815	9,348	9,837	11,345	12,838	16,266
4	4,045	4,878	5,989	7,779	9,488	11,143	11,668	13,277	14,860	18,466
5	5,132	6,064	7,289	9,236	11,070	12,832	13,388	15,086	16,750	20,515
6	6,211	7,231	8,558	10,645	12,592	14,449	15,033	16,812	18,548	22,457
7	7,283	8,383	9,803	12,017	14,067	16,013	16,622	18,475	20,278	24,321
8	8,351	9,524	11,030	13,362	15,507	17,535	18,168	20,090	21,955	26,124
9	9,414	10,656	12,242	14,684	16,919	19,023	19,679	21,666	23,589	27,877
10	10,473	11,781	13,442	15,987	18,307	20,483	21,161	23,209	25,188	29,588
11	11,530	12,899	14,631	17,275	19,675	21,920	22,618	24,725	26,757	31,264
12	12,584	14,011	15,812	18,549	21,026	23,337	24,054	26,217	28,300	32,909
13	13,636	15,119	16,985	19,812	22,362	24,736	25,471	27,688	29,819	34,527
14	14,685	16,222	18,151	21,064	23,685	26,119	26,873	29,141	31,319	36,124
15	15,733	17,322	19,311	22,307	24,996	27,488	28,259	30,578	32,801	37,698
16	16,780	18,418	20,465	23,542	26,296	28,845	29,633	32,000	34,267	39,252
17	17,824	19,511	21,615	24,769	27,587	30,191	30,995	33,409	35,718	40,791
18	18,868	20,601	22,760	25,989	28,869	31,526	32,346	34,805	37,156	42,312
19	19,910	21,689	23,900	27,204	30,144	32,852	33,687	36,191	38,582	43,819
20	20,951	22,775	25,038	28,412	31,410	34,170	35,020	37,566	39,997	45,314
21	21,992	23,858	26,171	29,615	32,671	35,479	36,343	38,932	41,401	46,796
22	23,031	24,939	27,301	30,813	33,924	36,781	37,659	40,289	42,796	48,268
23	24,069	26,018	28,429	32,007	35,172	38,076	38,968	41,638	44,181	49,728
24	25,106	27,096	29,553	33,196	36,415	39,364	40,270	42,980	45,558	51,179
25	26,143	28,172	30,675	34,382	37,652	40,646	41,566	44,314	46,928	52,619
26	27,179	29,246	31,795	35,563	38,885	41,923	42,856	45,642	48,290	54,051
27	28,214	30,319	32,912	36,741	40,113	43,195	44,140	46,963	49,645	55,475
28	29,249	31,391	34,027	37,916	41,337	44,461	45,419	48,278	50,994	56,892
29	30,283	32,461	35,139	39,087	42,557	45,722	46,693	49,588	52,335	58,301
30	31,316	33,530	36,250	40,256	43,773	46,979	47,962	50,892	53,672	59,702
31	32,349	34,598	37,359	41,422	44,985	48,232	49,226	52,191	55,002	61,098
32	33,381	35,665	38,466	42,585	46,194	49,480	50,487	53,486	56,328	62,487
33	34,413	36,731	39,572	43,745	47,400	50,725	51,743	54,775	57,648	63,869
34	35,444	37,795	40,676	44,903	48,602	51,966	52,995	56,061	58,964	65,247
35	36,475	38,859	41,778	46,059	49,802	53,203	54,244	57,342	60,275	66,619

E F-Verteilung

Vertafelt sind die Werte von f zu gegebenen Werten der Verteilungsfunktion für (v_1, v_2) Freiheitsgrade. Für $f_{1-\alpha}(v_1, v_2)$ gilt $F(f_{1-\alpha}(v_1, v_2)) = 1 - \alpha$.

v_1	$1 - \alpha$	v_2								
		1	2	3	4	5	6	7	8	9
1	0,900	39,864	8,526	5,538	4,545	4,060	3,776	3,589	3,458	3,360
1	0,950	161,446	18,513	10,128	7,709	6,608	5,987	5,591	5,318	5,117
1	0,975	647,793	38,506	17,443	12,218	10,007	8,813	8,073	7,571	7,209
1	0,990	4052,185	98,502	34,116	21,198	16,258	13,745	12,246	11,259	10,562
2	0,900	49,500	9,000	5,462	4,325	3,780	3,463	3,257	3,113	3,006
2	0,950	199,499	19,000	9,552	6,944	5,786	5,143	4,737	4,459	4,256
2	0,975	799,482	39,000	16,044	10,649	8,434	7,260	6,542	6,059	5,715
2	0,990	4999,340	99,000	30,816	18,000	13,274	10,925	9,547	8,649	8,022
3	0,900	53,593	9,162	5,391	4,191	3,619	3,289	3,074	2,924	2,813
3	0,950	215,707	19,164	9,277	6,591	5,409	4,757	4,347	4,066	3,863
3	0,975	864,151	39,166	15,439	9,979	7,764	6,599	5,890	5,416	5,078
3	0,990	5403,534	99,164	29,457	16,694	12,060	9,780	8,451	7,591	6,992
4	0,900	55,833	9,243	5,343	4,107	3,520	3,181	2,961	2,806	2,693
4	0,950	224,583	19,247	9,117	6,388	5,192	4,534	4,120	3,838	3,633
4	0,975	899,599	39,248	15,101	9,604	7,388	6,227	5,523	5,053	4,718
4	0,990	5624,257	99,251	28,710	15,977	11,392	9,148	7,847	7,006	6,422
5	0,900	57,240	9,293	5,309	4,051	3,453	3,108	2,883	2,726	2,611
5	0,950	230,160	19,296	9,013	6,256	5,050	4,387	3,972	3,688	3,482
5	0,975	921,835	39,298	14,885	9,364	7,146	5,988	5,285	4,817	4,484
5	0,990	5763,955	99,302	28,237	15,522	10,967	8,746	7,460	6,632	6,057
6	0,900	58,204	9,326	5,285	4,010	3,405	3,055	2,827	2,668	2,551
6	0,950	233,988	19,329	8,941	6,163	4,950	4,284	3,866	3,581	3,374
6	0,975	937,114	39,331	14,735	9,197	6,978	5,820	5,119	4,652	4,320
6	0,990	5858,950	99,331	27,911	15,207	10,672	8,466	7,191	6,371	5,802
7	0,900	58,906	9,349	5,266	3,979	3,368	3,014	2,785	2,624	2,505
7	0,950	236,767	19,353	8,887	6,094	4,876	4,207	3,787	3,500	3,293
7	0,975	948,203	39,356	14,624	9,074	6,853	5,695	4,995	4,529	4,197
7	0,990	5928,334	99,357	27,671	14,976	10,456	8,260	6,993	6,178	5,613
8	0,900	59,439	9,367	5,252	3,955	3,339	2,983	2,752	2,589	2,469
8	0,950	238,884	19,371	8,845	6,041	4,818	4,147	3,726	3,438	3,230
8	0,975	956,643	39,373	14,540	8,980	6,757	5,600	4,899	4,433	4,102
8	0,990	5980,954	99,375	27,489	14,799	10,289	8,102	6,840	6,029	5,467
9	0,900	59,857	9,381	5,240	3,936	3,316	2,958	2,725	2,561	2,440
9	0,950	240,543	19,385	8,812	5,999	4,772	4,099	3,677	3,388	3,179
9	0,975	963,279	39,387	14,473	8,905	6,681	5,523	4,823	4,357	4,026
9	0,990	6022,397	99,390	27,345	14,659	10,158	7,976	6,719	5,911	5,351

v_1	$1 - \alpha$	v_2									
		10	11	12	13	14	15	16	17	18	19
1	0,900	3,285	3,225	3,177	3,136	3,102	3,073	3,048	3,026	3,007	2,990
1	0,950	4,965	4,844	4,747	4,667	4,600	4,543	4,494	4,451	4,414	4,381
1	0,975	6,937	6,724	6,554	6,414	6,298	6,200	6,115	6,042	5,978	5,922
1	0,990	10,044	9,646	9,330	9,074	8,862	8,683	8,531	8,400	8,285	8,185
2	0,900	2,924	2,860	2,807	2,763	2,726	2,695	2,668	2,645	2,624	2,606
2	0,950	4,103	3,982	3,885	3,806	3,739	3,682	3,634	3,592	3,555	3,522
2	0,975	5,456	5,256	5,096	4,965	4,857	4,765	4,687	4,619	4,560	4,508
2	0,990	7,559	7,206	6,927	6,701	6,515	6,359	6,226	6,112	6,013	5,926
3	0,900	2,728	2,660	2,606	2,560	2,522	2,490	2,462	2,437	2,416	2,397
3	0,950	3,708	3,587	3,490	3,411	3,344	3,287	3,239	3,197	3,160	3,127
3	0,975	4,826	4,630	4,474	4,347	4,242	4,153	4,077	4,011	3,954	3,903
3	0,990	6,552	6,217	5,953	5,739	5,564	5,417	5,292	5,185	5,092	5,010
4	0,900	2,605	2,536	2,480	2,434	2,395	2,361	2,333	2,308	2,286	2,266
4	0,950	3,478	3,357	3,259	3,179	3,112	3,056	3,007	2,965	2,928	2,895
4	0,975	4,468	4,275	4,121	3,996	3,892	3,804	3,729	3,665	3,608	3,559
4	0,990	5,994	5,668	5,412	5,205	5,035	4,893	4,773	4,669	4,579	4,500
5	0,900	2,522	2,451	2,394	2,347	2,307	2,273	2,244	2,218	2,196	2,176
5	0,950	3,326	3,204	3,106	3,025	2,958	2,901	2,852	2,810	2,773	2,740
5	0,975	4,236	4,044	3,891	3,767	3,663	3,576	3,502	3,438	3,382	3,333
5	0,990	5,636	5,316	5,064	4,862	4,695	4,556	4,437	4,336	4,248	4,171
6	0,900	2,461	2,389	2,331	2,283	2,243	2,208	2,178	2,152	2,130	2,109
6	0,950	3,217	3,095	2,996	2,915	2,848	2,790	2,741	2,699	2,661	2,628
6	0,975	4,072	3,881	3,728	3,604	3,501	3,415	3,341	3,277	3,221	3,172
6	0,990	5,386	5,069	4,821	4,620	4,456	4,318	4,202	4,101	4,015	3,939
7	0,900	2,414	2,342	2,283	2,234	2,193	2,158	2,128	2,102	2,079	2,058
7	0,950	3,135	3,012	2,913	2,832	2,764	2,707	2,657	2,614	2,577	2,544
7	0,975	3,950	3,759	3,607	3,483	3,380	3,293	3,219	3,156	3,100	3,051
7	0,990	5,200	4,886	4,640	4,441	4,278	4,142	4,026	3,927	3,841	3,765
8	0,900	2,377	2,304	2,245	2,195	2,154	2,119	2,088	2,061	2,038	2,017
8	0,950	3,072	2,948	2,849	2,767	2,699	2,641	2,591	2,548	2,510	2,477
8	0,975	3,855	3,664	3,512	3,388	3,285	3,199	3,125	3,061	3,005	2,956
8	0,990	5,057	4,744	4,499	4,302	4,140	4,004	3,890	3,791	3,705	3,631
9	0,900	2,347	2,274	2,214	2,164	2,122	2,086	2,055	2,028	2,005	1,984
9	0,950	3,020	2,896	2,796	2,714	2,646	2,588	2,538	2,494	2,456	2,423
9	0,975	3,779	3,588	3,436	3,312	3,209	3,123	3,049	2,985	2,929	2,880
9	0,990	4,942	4,632	4,388	4,191	4,030	3,895	3,780	3,682	3,597	3,523

v_1	$1 - \alpha$	v_2										
		20	21	22	23	24	25	26	27	28	29	30
1	0,900	2,975	2,961	2,949	2,937	2,927	2,918	2,909	2,901	2,894	2,887	2,881
1	0,950	4,351	4,325	4,301	4,279	4,260	4,242	4,225	4,210	4,196	4,183	4,171
1	0,975	5,871	5,827	5,786	5,750	5,717	5,686	5,659	5,633	5,610	5,588	5,568
1	0,990	8,096	8,017	7,945	7,881	7,823	7,770	7,721	7,677	7,636	7,598	7,562
2	0,900	2,589	2,575	2,561	2,549	2,538	2,528	2,519	2,511	2,503	2,495	2,489
2	0,950	3,493	3,467	3,443	3,422	3,403	3,385	3,369	3,354	3,340	3,328	3,316
2	0,975	4,461	4,420	4,383	4,349	4,319	4,291	4,265	4,242	4,221	4,201	4,182
2	0,990	5,849	5,780	5,719	5,664	5,614	5,568	5,526	5,488	5,453	5,420	5,390
3	0,900	2,380	2,365	2,351	2,339	2,327	2,317	2,307	2,299	2,291	2,283	2,276
3	0,950	3,098	3,072	3,049	3,028	3,009	2,991	2,975	2,960	2,947	2,934	2,922
3	0,975	3,859	3,819	3,783	3,750	3,721	3,694	3,670	3,647	3,626	3,607	3,589
3	0,990	4,938	4,874	4,817	4,765	4,718	4,675	4,637	4,601	4,568	4,538	4,510
4	0,900	2,249	2,233	2,219	2,207	2,195	2,184	2,174	2,165	2,157	2,149	2,142
4	0,950	2,866	2,840	2,817	2,796	2,776	2,759	2,743	2,728	2,714	2,701	2,690
4	0,975	3,515	3,475	3,440	3,408	3,379	3,353	3,329	3,307	3,286	3,267	3,250
4	0,990	4,431	4,369	4,313	4,264	4,218	4,177	4,140	4,106	4,074	4,045	4,018
5	0,900	2,158	2,142	2,128	2,115	2,103	2,092	2,082	2,073	2,064	2,057	2,049
5	0,950	2,711	2,685	2,661	2,640	2,621	2,603	2,587	2,572	2,558	2,545	2,534
5	0,975	3,289	3,250	3,215	3,183	3,155	3,129	3,105	3,083	3,063	3,044	3,026
5	0,990	4,103	4,042	3,988	3,939	3,895	3,855	3,818	3,785	3,754	3,725	3,699
6	0,900	2,091	2,075	2,060	2,047	2,035	2,024	2,014	2,005	1,996	1,988	1,980
6	0,950	2,599	2,573	2,549	2,528	2,508	2,490	2,474	2,459	2,445	2,432	2,421
6	0,975	3,128	3,090	3,055	3,023	2,995	2,969	2,945	2,923	2,903	2,884	2,867
6	0,990	3,871	3,812	3,758	3,710	3,667	3,627	3,591	3,558	3,528	3,499	3,473
7	0,900	2,040	2,023	2,008	1,995	1,983	1,971	1,961	1,952	1,943	1,935	1,927
7	0,950	2,514	2,488	2,464	2,442	2,423	2,405	2,388	2,373	2,359	2,346	2,334
7	0,975	3,007	2,969	2,934	2,902	2,874	2,848	2,824	2,802	2,782	2,763	2,746
7	0,990	3,699	3,640	3,587	3,539	3,496	3,457	3,421	3,388	3,358	3,330	3,305
8	0,900	1,999	1,982	1,967	1,953	1,941	1,929	1,919	1,909	1,900	1,892	1,884
8	0,950	2,447	2,420	2,397	2,375	2,355	2,337	2,321	2,305	2,291	2,278	2,266
8	0,975	2,913	2,874	2,839	2,808	2,779	2,753	2,729	2,707	2,687	2,669	2,651
8	0,990	3,564	3,506	3,453	3,406	3,363	3,324	3,288	3,256	3,226	3,198	3,173
9	0,900	1,965	1,948	1,933	1,919	1,906	1,895	1,884	1,874	1,865	1,857	1,849
9	0,950	2,393	2,366	2,342	2,320	2,300	2,282	2,265	2,250	2,236	2,223	2,211
9	0,975	2,837	2,798	2,763	2,731	2,703	2,677	2,653	2,631	2,611	2,592	2,575
9	0,990	3,457	3,398	3,346	3,299	3,256	3,217	3,182	3,149	3,120	3,092	3,067

v_1	$1 - \alpha$	v_2										
		40	50	60	70	80	90	100	120	150	200	∞
1	0,900	2,835	2,809	2,791	2,779	2,769	2,762	2,756	2,748	2,739	2,731	2,706
1	0,950	4,085	4,034	4,001	3,978	3,960	3,947	3,936	3,920	3,904	3,888	3,841
1	0,975	5,424	5,340	5,286	5,247	5,218	5,196	5,179	5,152	5,126	5,100	5,024
1	0,990	7,314	7,171	7,077	7,011	6,963	6,925	6,895	6,851	6,807	6,763	6,635
2	0,900	2,440	2,412	2,393	2,380	2,370	2,363	2,356	2,347	2,338	2,329	2,303
2	0,950	3,232	3,183	3,150	3,128	3,111	3,098	3,087	3,072	3,056	3,041	2,996
2	0,975	4,051	3,975	3,925	3,890	3,864	3,844	3,828	3,805	3,781	3,758	3,689
2	0,990	5,178	5,057	4,977	4,922	4,881	4,849	4,824	4,787	4,749	4,713	4,605
3	0,900	2,226	2,197	2,177	2,164	2,154	2,146	2,139	2,130	2,121	2,111	2,084
3	0,950	2,839	2,790	2,758	2,736	2,719	2,706	2,696	2,680	2,665	2,650	2,605
3	0,975	3,463	3,390	3,343	3,309	3,284	3,265	3,250	3,227	3,204	3,182	3,116
3	0,990	4,313	4,199	4,126	4,074	4,036	4,007	3,984	3,949	3,915	3,881	3,782
4	0,900	2,091	2,061	2,041	2,027	2,016	2,008	2,002	1,992	1,983	1,973	1,945
4	0,950	2,606	2,557	2,525	2,503	2,486	2,473	2,463	2,447	2,432	2,417	2,372
4	0,975	3,126	3,054	3,008	2,975	2,950	2,932	2,917	2,894	2,872	2,850	2,786
4	0,990	3,828	3,720	3,649	3,600	3,563	3,535	3,513	3,480	3,447	3,414	3,319
5	0,900	1,997	1,966	1,946	1,931	1,921	1,912	1,906	1,896	1,886	1,876	1,847
5	0,950	2,449	2,400	2,368	2,346	2,329	2,316	2,305	2,290	2,274	2,259	2,214
5	0,975	2,904	2,833	2,786	2,754	2,730	2,711	2,696	2,674	2,652	2,630	2,566
5	0,990	3,514	3,408	3,339	3,291	3,255	3,228	3,206	3,174	3,142	3,110	3,017
6	0,900	1,927	1,895	1,875	1,860	1,849	1,841	1,834	1,824	1,814	1,804	1,774
6	0,950	2,336	2,286	2,254	2,231	2,214	2,201	2,191	2,175	2,160	2,144	2,099
6	0,975	2,744	2,674	2,627	2,595	2,571	2,552	2,537	2,515	2,494	2,472	2,408
6	0,990	3,291	3,186	3,119	3,071	3,036	3,009	2,988	2,956	2,924	2,893	2,802
7	0,900	1,873	1,840	1,819	1,804	1,793	1,785	1,778	1,767	1,757	1,747	1,717
7	0,950	2,249	2,199	2,167	2,143	2,126	2,113	2,103	2,087	2,071	2,056	2,010
7	0,975	2,624	2,553	2,507	2,474	2,450	2,432	2,417	2,395	2,373	2,351	2,288
7	0,990	3,124	3,020	2,953	2,906	2,871	2,845	2,823	2,792	2,761	2,730	2,639
8	0,900	1,829	1,796	1,775	1,760	1,748	1,739	1,732	1,722	1,712	1,701	1,670
8	0,950	2,180	2,130	2,097	2,074	2,056	2,043	2,032	2,016	2,001	1,985	1,938
8	0,975	2,529	2,458	2,412	2,379	2,355	2,336	2,321	2,299	2,278	2,256	2,192
8	0,990	2,993	2,890	2,823	2,777	2,742	2,715	2,694	2,663	2,632	2,601	2,511
9	0,900	1,793	1,760	1,738	1,723	1,711	1,702	1,695	1,684	1,674	1,663	1,632
9	0,950	2,124	2,073	2,040	2,017	1,999	1,986	1,975	1,959	1,943	1,927	1,880
9	0,975	2,452	2,381	2,334	2,302	2,277	2,259	2,244	2,222	2,200	2,178	2,114
9	0,990	2,888	2,785	2,718	2,672	2,637	2,611	2,590	2,559	2,528	2,497	2,407

v_1	$1 - \alpha$	v_2								
		1	2	3	4	5	6	7	8	9
10	0,900	60,195	9,392	5,230	3,920	3,297	2,937	2,703	2,538	2,416
10	0,950	241,882	19,396	8,785	5,964	4,735	4,060	3,637	3,347	3,137
10	0,975	968,634	39,398	14,419	8,844	6,619	5,461	4,761	4,295	3,964
10	0,990	6055,925	99,397	27,228	14,546	10,051	7,874	6,620	5,814	5,257
11	0,900	60,473	9,401	5,222	3,907	3,282	2,920	2,684	2,519	2,396
11	0,950	242,981	19,405	8,763	5,936	4,704	4,027	3,603	3,313	3,102
11	0,975	973,028	39,407	14,374	8,794	6,568	5,410	4,709	4,243	3,912
11	0,990	6083,399	99,408	27,132	14,452	9,963	7,790	6,538	5,734	5,178
12	0,900	60,705	9,408	5,216	3,896	3,268	2,905	2,668	2,502	2,379
12	0,950	243,905	19,412	8,745	5,912	4,678	4,000	3,575	3,284	3,073
12	0,975	976,725	39,415	14,337	8,751	6,525	5,366	4,666	4,200	3,868
12	0,990	6106,682	99,419	27,052	14,374	9,888	7,718	6,469	5,667	5,111
13	0,900	60,902	9,415	5,210	3,886	3,257	2,892	2,654	2,488	2,364
13	0,950	244,690	19,419	8,729	5,891	4,655	3,976	3,550	3,259	3,048
13	0,975	979,839	39,421	14,305	8,715	6,488	5,329	4,628	4,162	3,831
13	0,990	6125,774	99,422	26,983	14,306	9,825	7,657	6,410	5,609	5,055
14	0,900	61,073	9,420	5,205	3,878	3,247	2,881	2,643	2,475	2,351
14	0,950	245,363	19,424	8,715	5,873	4,636	3,956	3,529	3,237	3,025
14	0,975	982,545	39,427	14,277	8,684	6,456	5,297	4,596	4,130	3,798
14	0,990	6143,004	99,426	26,924	14,249	9,770	7,605	6,359	5,559	5,005
15	0,900	61,220	9,425	5,200	3,870	3,238	2,871	2,632	2,464	2,340
15	0,950	245,949	19,429	8,703	5,858	4,619	3,938	3,511	3,218	3,006
15	0,975	984,874	39,431	14,253	8,657	6,428	5,269	4,568	4,101	3,769
15	0,990	6156,974	99,433	26,872	14,198	9,722	7,559	6,314	5,515	4,962
20	0,900	61,740	9,441	5,184	3,844	3,207	2,836	2,595	2,425	2,298
20	0,950	248,016	19,446	8,660	5,803	4,558	3,874	3,445	3,150	2,936
20	0,975	993,081	39,448	14,167	8,560	6,329	5,168	4,467	3,999	3,667
20	0,990	6208,662	99,448	26,690	14,019	9,553	7,396	6,155	5,359	4,808
25	0,900	62,055	9,451	5,175	3,828	3,187	2,815	2,571	2,400	2,272
25	0,950	249,260	19,456	8,634	5,769	4,521	3,835	3,404	3,108	2,893
25	0,975	998,087	39,458	14,115	8,501	6,268	5,107	4,405	3,937	3,604
25	0,990	6239,861	99,459	26,579	13,911	9,449	7,296	6,058	5,263	4,713
30	0,900	62,265	9,458	5,168	3,817	3,174	2,800	2,555	2,383	2,255
30	0,950	250,096	19,463	8,617	5,746	4,496	3,808	3,376	3,079	2,864
30	0,975	1001,405	39,465	14,081	8,461	6,227	5,065	4,362	3,894	3,560
30	0,990	6260,350	99,466	26,504	13,838	9,379	7,229	5,992	5,198	4,649

v_1	$1 - \alpha$	v_2									
		10	11	12	13	14	15	16	17	18	19
10	0,900	2,323	2,248	2,188	2,138	2,095	2,059	2,028	2,001	1,977	1,956
10	0,950	2,978	2,854	2,753	2,671	2,602	2,544	2,494	2,450	2,412	2,378
10	0,975	3,717	3,526	3,374	3,250	3,147	3,060	2,986	2,922	2,866	2,817
10	0,990	4,849	4,539	4,296	4,100	3,939	3,805	3,691	3,593	3,508	3,434
11	0,900	2,302	2,227	2,166	2,116	2,073	2,037	2,005	1,978	1,954	1,932
11	0,950	2,943	2,818	2,717	2,635	2,565	2,507	2,456	2,413	2,374	2,340
11	0,975	3,665	3,474	3,321	3,197	3,095	3,008	2,934	2,870	2,814	2,765
11	0,990	4,772	4,462	4,220	4,025	3,864	3,730	3,616	3,518	3,434	3,360
12	0,900	2,284	2,209	2,147	2,097	2,054	2,017	1,985	1,958	1,933	1,912
12	0,950	2,913	2,788	2,687	2,604	2,534	2,475	2,425	2,381	2,342	2,308
12	0,975	3,621	3,430	3,277	3,153	3,050	2,963	2,889	2,825	2,769	2,720
12	0,990	4,706	4,397	4,155	3,960	3,800	3,666	3,553	3,455	3,371	3,297
13	0,900	2,269	2,193	2,131	2,080	2,037	2,000	1,968	1,940	1,916	1,894
13	0,950	2,887	2,761	2,660	2,577	2,507	2,448	2,397	2,353	2,314	2,280
13	0,975	3,583	3,392	3,239	3,115	3,012	2,925	2,851	2,786	2,730	2,681
13	0,990	4,650	4,342	4,100	3,905	3,745	3,612	3,498	3,401	3,316	3,242
14	0,900	2,255	2,179	2,117	2,066	2,022	1,985	1,953	1,925	1,900	1,878
14	0,950	2,865	2,739	2,637	2,554	2,484	2,424	2,373	2,329	2,290	2,256
14	0,975	3,550	3,359	3,206	3,082	2,979	2,891	2,817	2,753	2,696	2,647
14	0,990	4,601	4,293	4,052	3,857	3,698	3,564	3,451	3,353	3,269	3,195
15	0,900	2,244	2,167	2,105	2,053	2,010	1,972	1,940	1,912	1,887	1,865
15	0,950	2,845	2,719	2,617	2,533	2,463	2,403	2,352	2,308	2,269	2,234
15	0,975	3,522	3,330	3,177	3,053	2,949	2,862	2,788	2,723	2,667	2,617
15	0,990	4,558	4,251	4,010	3,815	3,656	3,522	3,409	3,312	3,227	3,153
20	0,900	2,201	2,123	2,060	2,007	1,962	1,924	1,891	1,862	1,837	1,814
20	0,950	2,774	2,646	2,544	2,459	2,388	2,328	2,276	2,230	2,191	2,155
20	0,975	3,419	3,226	3,073	2,948	2,844	2,756	2,681	2,616	2,559	2,509
20	0,990	4,405	4,099	3,858	3,665	3,505	3,372	3,259	3,162	3,077	3,003
25	0,900	2,174	2,095	2,031	1,978	1,933	1,894	1,860	1,831	1,805	1,782
25	0,950	2,730	2,601	2,498	2,412	2,341	2,280	2,227	2,181	2,141	2,106
25	0,975	3,355	3,162	3,008	2,882	2,778	2,689	2,614	2,548	2,491	2,441
25	0,990	4,311	4,005	3,765	3,571	3,412	3,278	3,165	3,068	2,983	2,909
30	0,900	2,155	2,076	2,011	1,958	1,912	1,873	1,839	1,809	1,783	1,759
30	0,950	2,700	2,570	2,466	2,380	2,308	2,247	2,194	2,148	2,107	2,071
30	0,975	3,311	3,118	2,963	2,837	2,732	2,644	2,568	2,502	2,445	2,394
30	0,990	4,247	3,941	3,701	3,507	3,348	3,214	3,101	3,003	2,919	2,844

v_1	$1 - \alpha$	v_2										
		20	21	22	23	24	25	26	27	28	29	30
10	0,900	1,937	1,920	1,904	1,890	1,877	1,866	1,855	1,845	1,836	1,827	1,819
10	0,950	2,348	2,321	2,297	2,275	2,255	2,236	2,220	2,204	2,190	2,177	2,165
10	0,975	2,774	2,735	2,700	2,668	2,640	2,613	2,590	2,568	2,547	2,529	2,511
10	0,990	3,368	3,310	3,258	3,211	3,168	3,129	3,094	3,062	3,032	3,005	2,979
11	0,900	1,913	1,896	1,880	1,866	1,853	1,841	1,830	1,820	1,811	1,802	1,794
11	0,950	2,310	2,283	2,259	2,236	2,216	2,198	2,181	2,166	2,151	2,138	2,126
11	0,975	2,721	2,682	2,647	2,615	2,586	2,560	2,536	2,514	2,494	2,475	2,458
11	0,990	3,294	3,236	3,184	3,137	3,094	3,056	3,021	2,988	2,959	2,931	2,906
12	0,900	1,892	1,875	1,859	1,845	1,832	1,820	1,809	1,799	1,790	1,781	1,773
12	0,950	2,278	2,250	2,226	2,204	2,183	2,165	2,148	2,132	2,118	2,104	2,092
12	0,975	2,676	2,637	2,602	2,570	2,541	2,515	2,491	2,469	2,448	2,430	2,412
12	0,990	3,231	3,173	3,121	3,074	3,032	2,993	2,958	2,926	2,896	2,868	2,843
13	0,900	1,875	1,857	1,841	1,827	1,814	1,802	1,790	1,780	1,771	1,762	1,754
13	0,950	2,250	2,222	2,198	2,175	2,155	2,136	2,119	2,103	2,089	2,075	2,063
13	0,975	2,637	2,598	2,563	2,531	2,502	2,476	2,452	2,429	2,409	2,390	2,372
13	0,990	3,177	3,119	3,067	3,020	2,977	2,939	2,904	2,872	2,842	2,814	2,789
14	0,900	1,859	1,841	1,825	1,811	1,797	1,785	1,774	1,764	1,754	1,745	1,737
14	0,950	2,225	2,197	2,173	2,150	2,130	2,111	2,094	2,078	2,064	2,050	2,037
14	0,975	2,603	2,564	2,528	2,497	2,468	2,441	2,417	2,395	2,374	2,355	2,338
14	0,990	3,130	3,072	3,019	2,973	2,930	2,892	2,857	2,824	2,795	2,767	2,742
15	0,900	1,845	1,827	1,811	1,796	1,783	1,771	1,760	1,749	1,740	1,731	1,722
15	0,950	2,203	2,176	2,151	2,128	2,108	2,089	2,072	2,056	2,041	2,027	2,015
15	0,975	2,573	2,534	2,498	2,466	2,437	2,411	2,387	2,364	2,344	2,325	2,307
15	0,990	3,088	3,030	2,978	2,931	2,889	2,850	2,815	2,783	2,753	2,726	2,700
20	0,900	1,794	1,776	1,759	1,744	1,730	1,718	1,706	1,695	1,685	1,676	1,667
20	0,950	2,124	2,096	2,071	2,048	2,027	2,007	1,990	1,974	1,959	1,945	1,932
20	0,975	2,464	2,425	2,389	2,357	2,327	2,300	2,276	2,253	2,232	2,213	2,195
20	0,990	2,938	2,880	2,827	2,780	2,738	2,699	2,664	2,632	2,602	2,574	2,549
25	0,900	1,761	1,742	1,726	1,710	1,696	1,683	1,671	1,660	1,650	1,640	1,632
25	0,950	2,074	2,045	2,020	1,996	1,975	1,955	1,938	1,921	1,906	1,891	1,878
25	0,975	2,396	2,356	2,320	2,287	2,257	2,230	2,205	2,183	2,161	2,142	2,124
25	0,990	2,843	2,785	2,733	2,686	2,643	2,604	2,569	2,536	2,506	2,478	2,453
30	0,900	1,738	1,719	1,702	1,686	1,672	1,659	1,647	1,636	1,625	1,616	1,606
30	0,950	2,039	2,010	1,984	1,961	1,939	1,919	1,901	1,884	1,869	1,854	1,841
30	0,975	2,349	2,308	2,272	2,239	2,209	2,182	2,157	2,133	2,112	2,092	2,074
30	0,990	2,778	2,720	2,667	2,620	2,577	2,538	2,503	2,470	2,440	2,412	2,386

v_1	$1 - \alpha$	v_2										
		40	50	60	70	80	90	100	120	150	200	∞
10	0,900	1,763	1,729	1,707	1,691	1,680	1,670	1,663	1,652	1,642	1,631	1,599
10	0,950	2,077	2,026	1,993	1,969	1,951	1,938	1,927	1,910	1,894	1,878	1,831
10	0,975	2,388	2,317	2,270	2,237	2,213	2,194	2,179	2,157	2,135	2,113	2,048
10	0,990	2,801	2,698	2,632	2,585	2,551	2,524	2,503	2,472	2,441	2,411	2,321
11	0,900	1,737	1,703	1,680	1,665	1,653	1,643	1,636	1,625	1,614	1,603	1,570
11	0,950	2,038	1,986	1,952	1,928	1,910	1,897	1,886	1,869	1,853	1,837	1,789
11	0,975	2,334	2,263	2,216	2,183	2,158	2,140	2,124	2,102	2,080	2,058	1,993
11	0,990	2,727	2,625	2,559	2,512	2,478	2,451	2,430	2,399	2,368	2,338	2,248
12	0,900	1,715	1,680	1,657	1,641	1,629	1,620	1,612	1,601	1,590	1,579	1,546
12	0,950	2,003	1,952	1,917	1,893	1,875	1,861	1,850	1,834	1,817	1,801	1,752
12	0,975	2,288	2,216	2,169	2,136	2,111	2,092	2,077	2,055	2,032	2,010	1,945
12	0,990	2,665	2,563	2,496	2,450	2,415	2,389	2,368	2,336	2,305	2,275	2,185
13	0,900	1,695	1,660	1,637	1,621	1,609	1,599	1,592	1,580	1,569	1,558	1,524
13	0,950	1,974	1,921	1,887	1,863	1,845	1,830	1,819	1,803	1,786	1,769	1,720
13	0,975	2,248	2,176	2,129	2,095	2,071	2,051	2,036	2,014	1,991	1,969	1,903
13	0,990	2,611	2,508	2,442	2,395	2,361	2,334	2,313	2,282	2,251	2,220	2,130
14	0,900	1,678	1,643	1,619	1,603	1,590	1,581	1,573	1,562	1,550	1,539	1,505
14	0,950	1,948	1,895	1,860	1,836	1,817	1,803	1,792	1,775	1,758	1,742	1,692
14	0,975	2,213	2,140	2,093	2,059	2,035	2,015	2,000	1,977	1,955	1,932	1,866
14	0,990	2,563	2,461	2,394	2,348	2,313	2,286	2,265	2,234	2,203	2,172	2,082
15	0,900	1,662	1,627	1,603	1,587	1,574	1,564	1,557	1,545	1,533	1,522	1,487
15	0,950	1,924	1,871	1,836	1,812	1,793	1,779	1,768	1,750	1,734	1,717	1,666
15	0,975	2,182	2,109	2,061	2,028	2,003	1,983	1,968	1,945	1,922	1,900	1,833
15	0,990	2,522	2,419	2,352	2,306	2,271	2,244	2,223	2,191	2,160	2,129	2,039
20	0,900	1,605	1,568	1,543	1,526	1,513	1,503	1,494	1,482	1,470	1,458	1,421
20	0,950	1,839	1,784	1,748	1,722	1,703	1,688	1,676	1,659	1,641	1,623	1,571
20	0,975	2,068	1,993	1,944	1,910	1,884	1,864	1,849	1,825	1,801	1,778	1,708
20	0,990	2,369	2,265	2,198	2,150	2,115	2,088	2,067	2,035	2,003	1,971	1,878
25	0,900	1,568	1,529	1,504	1,486	1,472	1,461	1,453	1,440	1,427	1,414	1,375
25	0,950	1,783	1,727	1,690	1,664	1,644	1,629	1,616	1,598	1,580	1,561	1,506
25	0,975	1,994	1,919	1,869	1,833	1,807	1,787	1,770	1,746	1,722	1,698	1,626
25	0,990	2,271	2,167	2,098	2,050	2,015	1,987	1,965	1,932	1,900	1,868	1,773
30	0,900	1,541	1,502	1,476	1,457	1,443	1,432	1,423	1,409	1,396	1,383	1,342
30	0,950	1,744	1,687	1,649	1,622	1,602	1,586	1,573	1,554	1,535	1,516	1,459
30	0,975	1,943	1,866	1,815	1,779	1,752	1,731	1,715	1,690	1,665	1,640	1,566
30	0,990	2,203	2,098	2,028	1,980	1,944	1,916	1,893	1,860	1,827	1,794	1,696

v_1	$1 - \alpha$	v_2								
		1	2	3	4	5	6	7	8	9
40	0,900	62,529	9,466	5,160	3,804	3,157	2,781	2,535	2,361	2,232
40	0,950	251,144	19,471	8,594	5,717	4,464	3,774	3,340	3,043	2,826
40	0,975	1005,596	39,473	14,036	8,411	6,175	5,012	4,309	3,840	3,505
40	0,990	6286,427	99,477	26,411	13,745	9,291	7,143	5,908	5,116	4,567
50	0,900	62,688	9,471	5,155	3,795	3,147	2,770	2,523	2,348	2,218
50	0,950	251,774	19,476	8,581	5,699	4,444	3,754	3,319	3,020	2,803
50	0,975	1008,098	39,478	14,010	8,381	6,144	4,980	4,276	3,807	3,472
50	0,990	6302,260	99,477	26,354	13,690	9,238	7,091	5,858	5,065	4,517
60	0,900	62,794	9,475	5,151	3,790	3,140	2,762	2,514	2,339	2,208
60	0,950	252,196	19,479	8,572	5,688	4,431	3,740	3,304	3,005	2,787
60	0,975	1009,787	39,481	13,992	8,360	6,123	4,959	4,254	3,784	3,449
60	0,990	6312,970	99,484	26,316	13,652	9,202	7,057	5,824	5,032	4,483
80	0,900	62,927	9,479	5,147	3,782	3,132	2,752	2,504	2,328	2,196
80	0,950	252,723	19,483	8,561	5,673	4,415	3,722	3,286	2,986	2,768
80	0,975	1011,911	39,486	13,970	8,335	6,096	4,932	4,227	3,756	3,421
80	0,990	6326,474	99,484	26,269	13,605	9,157	7,013	5,781	4,989	4,441
100	0,900	63,007	9,481	5,144	3,778	3,126	2,746	2,497	2,321	2,189
100	0,950	253,043	19,486	8,554	5,664	4,405	3,712	3,275	2,975	2,756
100	0,975	1013,163	39,488	13,956	8,319	6,080	4,915	4,210	3,739	3,403
100	0,990	6333,925	99,491	26,241	13,577	9,130	6,987	5,755	4,963	4,415
120	0,900	63,061	9,483	5,143	3,775	3,123	2,742	2,493	2,316	2,184
120	0,950	253,254	19,487	8,549	5,658	4,398	3,705	3,267	2,967	2,748
120	0,975	1014,036	39,489	13,947	8,309	6,069	4,904	4,199	3,728	3,392
120	0,990	6339,513	99,491	26,221	13,558	9,112	6,969	5,737	4,946	4,398
150	0,900	63,114	9,485	5,141	3,772	3,119	2,738	2,488	2,312	2,179
150	0,950	253,465	19,489	8,545	5,652	4,392	3,698	3,260	2,959	2,739
150	0,975	1014,851	39,491	13,938	8,299	6,059	4,893	4,188	3,716	3,380
150	0,990	6344,635	99,491	26,202	13,539	9,094	6,951	5,720	4,929	4,380
200	0,900	63,167	9,486	5,139	3,769	3,116	2,734	2,484	2,307	2,174
200	0,950	253,676	19,491	8,540	5,646	4,385	3,690	3,252	2,951	2,731
200	0,975	1015,724	39,493	13,929	8,288	6,048	4,882	4,176	3,705	3,368
200	0,990	6349,757	99,491	26,183	13,520	9,075	6,934	5,702	4,911	4,363
∞	0,900	63,328	9,491	5,134	3,761	3,105	2,722	2,471	2,293	2,159
∞	0,950	254,311	19,496	8,526	5,628	4,365	3,669	3,230	2,928	2,707
∞	0,975	1018,260	39,498	13,902	8,257	6,015	4,849	4,142	3,670	3,333
∞	0,990	6365,967	99,500	26,125	13,463	9,020	6,880	5,650	4,859	4,311

v_1	$1 - \alpha$	v_2									
		10	11	12	13	14	15	16	17	18	19
40	0,900	2,132	2,052	1,986	1,931	1,885	1,845	1,811	1,781	1,754	1,730
40	0,950	2,661	2,531	2,426	2,339	2,266	2,204	2,151	2,104	2,063	2,026
40	0,975	3,255	3,061	2,906	2,780	2,674	2,585	2,509	2,442	2,384	2,333
40	0,990	4,165	3,860	3,619	3,425	3,266	3,132	3,018	2,920	2,835	2,761
50	0,900	2,117	2,036	1,970	1,915	1,869	1,828	1,793	1,763	1,736	1,711
50	0,950	2,637	2,507	2,401	2,314	2,241	2,178	2,124	2,077	2,035	1,999
50	0,975	3,221	3,027	2,871	2,744	2,638	2,549	2,472	2,405	2,347	2,295
50	0,990	4,115	3,810	3,569	3,375	3,215	3,081	2,967	2,869	2,784	2,709
60	0,900	2,107	2,026	1,960	1,904	1,857	1,817	1,782	1,751	1,723	1,699
60	0,950	2,621	2,490	2,384	2,297	2,223	2,160	2,106	2,058	2,017	1,980
60	0,975	3,198	3,004	2,848	2,720	2,614	2,524	2,447	2,380	2,321	2,270
60	0,990	4,082	3,776	3,535	3,341	3,181	3,047	2,933	2,835	2,749	2,674
80	0,900	2,095	2,013	1,946	1,890	1,843	1,802	1,766	1,735	1,707	1,683
80	0,950	2,601	2,469	2,363	2,275	2,201	2,137	2,083	2,035	1,993	1,955
80	0,975	3,169	2,974	2,818	2,690	2,583	2,493	2,415	2,348	2,289	2,237
80	0,990	4,039	3,734	3,493	3,298	3,138	3,004	2,889	2,791	2,705	2,630
100	0,900	2,087	2,005	1,938	1,882	1,834	1,793	1,757	1,726	1,698	1,673
100	0,950	2,588	2,457	2,350	2,261	2,187	2,123	2,068	2,020	1,978	1,940
100	0,975	3,152	2,956	2,800	2,671	2,565	2,474	2,396	2,329	2,269	2,217
100	0,990	4,014	3,708	3,467	3,272	3,112	2,977	2,863	2,764	2,678	2,602
120	0,900	2,082	2,000	1,932	1,876	1,828	1,787	1,751	1,719	1,691	1,666
120	0,950	2,580	2,448	2,341	2,252	2,178	2,114	2,059	2,011	1,968	1,930
120	0,975	3,140	2,944	2,787	2,659	2,552	2,461	2,383	2,315	2,256	2,203
120	0,990	3,996	3,690	3,449	3,255	3,094	2,959	2,845	2,746	2,660	2,584
150	0,900	2,077	1,994	1,927	1,870	1,822	1,781	1,744	1,713	1,684	1,659
150	0,950	2,572	2,439	2,332	2,243	2,169	2,105	2,049	2,001	1,958	1,920
150	0,975	3,128	2,932	2,775	2,647	2,539	2,448	2,370	2,302	2,242	2,190
150	0,990	3,979	3,673	3,432	3,237	3,076	2,942	2,827	2,728	2,641	2,565
200	0,900	2,071	1,989	1,921	1,864	1,816	1,774	1,738	1,706	1,678	1,652
200	0,950	2,563	2,431	2,323	2,234	2,159	2,095	2,039	1,991	1,948	1,910
200	0,975	3,116	2,920	2,763	2,634	2,526	2,435	2,357	2,289	2,229	2,176
200	0,990	3,962	3,656	3,414	3,219	3,059	2,923	2,808	2,709	2,623	2,547
∞	0,900	2,055	1,972	1,904	1,846	1,797	1,755	1,718	1,686	1,657	1,631
∞	0,950	2,538	2,404	2,296	2,206	2,131	2,066	2,010	1,960	1,917	1,878
∞	0,975	3,080	2,883	2,725	2,595	2,487	2,395	2,316	2,247	2,187	2,133
∞	0,990	3,909	3,602	3,361	3,165	3,004	2,868	2,753	2,653	2,566	2,489

v_1	$1 - \alpha$	v_2										
		20	21	22	23	24	25	26	27	28	29	30
40	0,900	1,708	1,689	1,671	1,655	1,641	1,627	1,615	1,603	1,592	1,583	1,573
40	0,950	1,994	1,965	1,938	1,914	1,892	1,872	1,853	1,836	1,820	1,806	1,792
40	0,975	2,287	2,246	2,210	2,176	2,146	2,118	2,093	2,069	2,048	2,028	2,009
40	0,990	2,695	2,636	2,583	2,536	2,492	2,453	2,417	2,384	2,354	2,325	2,299
50	0,900	1,690	1,670	1,652	1,636	1,621	1,607	1,594	1,583	1,572	1,562	1,552
50	0,950	1,966	1,936	1,909	1,885	1,863	1,842	1,823	1,806	1,790	1,775	1,761
50	0,975	2,249	2,208	2,171	2,137	2,107	2,079	2,053	2,029	2,007	1,987	1,968
50	0,990	2,643	2,584	2,531	2,483	2,440	2,400	2,364	2,330	2,300	2,271	2,245
60	0,900	1,677	1,657	1,639	1,622	1,607	1,593	1,581	1,569	1,558	1,547	1,538
60	0,950	1,946	1,916	1,889	1,865	1,842	1,822	1,803	1,785	1,769	1,754	1,740
60	0,975	2,223	2,182	2,145	2,111	2,080	2,052	2,026	2,002	1,980	1,959	1,940
60	0,990	2,608	2,548	2,495	2,447	2,403	2,364	2,327	2,294	2,263	2,234	2,208
80	0,900	1,660	1,640	1,622	1,605	1,590	1,576	1,562	1,550	1,539	1,529	1,519
80	0,950	1,922	1,891	1,864	1,839	1,816	1,796	1,776	1,758	1,742	1,726	1,712
80	0,975	2,190	2,148	2,111	2,077	2,045	2,017	1,991	1,966	1,944	1,923	1,904
80	0,990	2,563	2,503	2,450	2,401	2,357	2,317	2,281	2,247	2,216	2,187	2,160
100	0,900	1,650	1,630	1,611	1,594	1,579	1,565	1,551	1,539	1,528	1,517	1,507
100	0,950	1,907	1,876	1,849	1,823	1,800	1,779	1,760	1,742	1,725	1,710	1,695
100	0,975	2,170	2,128	2,090	2,056	2,024	1,996	1,969	1,945	1,922	1,901	1,882
100	0,990	2,535	2,476	2,422	2,373	2,329	2,289	2,252	2,218	2,187	2,158	2,131
120	0,900	1,643	1,623	1,604	1,587	1,571	1,557	1,544	1,531	1,520	1,509	1,499
120	0,950	1,896	1,866	1,838	1,813	1,790	1,768	1,749	1,731	1,714	1,698	1,683
120	0,975	2,156	2,114	2,076	2,041	2,010	1,981	1,954	1,930	1,907	1,886	1,866
120	0,990	2,517	2,457	2,403	2,354	2,310	2,270	2,233	2,198	2,167	2,138	2,111
150	0,900	1,636	1,616	1,597	1,580	1,564	1,549	1,536	1,523	1,512	1,501	1,491
150	0,950	1,886	1,855	1,827	1,802	1,779	1,757	1,738	1,719	1,702	1,686	1,672
150	0,975	2,142	2,100	2,062	2,027	1,995	1,966	1,940	1,915	1,892	1,871	1,851
150	0,990	2,498	2,438	2,384	2,335	2,291	2,250	2,213	2,179	2,147	2,118	2,091
200	0,900	1,629	1,608	1,590	1,572	1,556	1,542	1,528	1,515	1,504	1,493	1,482
200	0,950	1,875	1,845	1,817	1,791	1,768	1,746	1,726	1,708	1,691	1,675	1,660
200	0,975	2,128	2,086	2,047	2,013	1,981	1,952	1,925	1,900	1,877	1,855	1,835
200	0,990	2,479	2,419	2,365	2,316	2,271	2,230	2,193	2,159	2,127	2,097	2,070
∞	0,900	1,607	1,586	1,567	1,549	1,533	1,518	1,504	1,491	1,478	1,467	1,456
∞	0,950	1,843	1,812	1,783	1,757	1,733	1,711	1,691	1,672	1,654	1,638	1,622
∞	0,975	2,085	2,042	2,003	1,968	1,935	1,906	1,878	1,853	1,829	1,807	1,787
∞	0,990	2,421	2,360	2,305	2,256	2,211	2,169	2,131	2,097	2,064	2,034	2,006

v_1	$1 - \alpha$	v_2										
		40	50	60	70	80	90	100	120	150	200	∞
40	0,900	1,506	1,465	1,437	1,418	1,403	1,391	1,382	1,368	1,353	1,339	1,295
40	0,950	1,693	1,634	1,594	1,566	1,545	1,528	1,515	1,495	1,475	1,455	1,394
40	0,975	1,875	1,796	1,744	1,707	1,679	1,657	1,640	1,614	1,588	1,562	1,484
40	0,990	2,114	2,007	1,936	1,886	1,849	1,820	1,797	1,763	1,729	1,694	1,592
50	0,900	1,483	1,441	1,413	1,392	1,377	1,365	1,355	1,340	1,325	1,310	1,263
50	0,950	1,660	1,599	1,559	1,530	1,508	1,491	1,477	1,457	1,436	1,415	1,350
50	0,975	1,832	1,752	1,699	1,660	1,632	1,610	1,592	1,565	1,538	1,511	1,428
50	0,990	2,058	1,949	1,877	1,826	1,788	1,759	1,735	1,700	1,665	1,629	1,523
60	0,900	1,467	1,424	1,395	1,374	1,358	1,346	1,336	1,320	1,305	1,289	1,240
60	0,950	1,637	1,576	1,534	1,505	1,482	1,465	1,450	1,429	1,407	1,386	1,318
60	0,975	1,803	1,721	1,667	1,628	1,599	1,576	1,558	1,530	1,502	1,474	1,388
60	0,990	2,019	1,909	1,836	1,785	1,746	1,716	1,692	1,656	1,620	1,583	1,473
80	0,900	1,447	1,402	1,372	1,350	1,334	1,321	1,310	1,294	1,277	1,261	1,207
80	0,950	1,608	1,544	1,502	1,471	1,448	1,429	1,415	1,392	1,369	1,346	1,273
80	0,975	1,764	1,681	1,625	1,585	1,555	1,531	1,512	1,483	1,454	1,425	1,333
80	0,990	1,969	1,857	1,783	1,730	1,690	1,659	1,634	1,597	1,559	1,521	1,404
100	0,900	1,434	1,388	1,358	1,335	1,318	1,304	1,293	1,277	1,259	1,242	1,185
100	0,950	1,589	1,525	1,481	1,450	1,426	1,407	1,392	1,369	1,345	1,321	1,243
100	0,975	1,741	1,656	1,599	1,558	1,527	1,503	1,483	1,454	1,423	1,393	1,296
100	0,990	1,938	1,825	1,749	1,695	1,655	1,623	1,598	1,559	1,520	1,481	1,358
120	0,900	1,425	1,379	1,348	1,325	1,307	1,293	1,282	1,265	1,247	1,228	1,169
120	0,950	1,577	1,511	1,467	1,435	1,411	1,391	1,376	1,352	1,327	1,302	1,221
120	0,975	1,724	1,639	1,581	1,539	1,508	1,483	1,463	1,433	1,402	1,370	1,268
120	0,990	1,917	1,803	1,726	1,672	1,630	1,598	1,572	1,533	1,493	1,453	1,325
150	0,900	1,416	1,369	1,337	1,314	1,296	1,281	1,270	1,252	1,233	1,214	1,151
150	0,950	1,564	1,498	1,453	1,420	1,395	1,375	1,359	1,334	1,309	1,283	1,197
150	0,975	1,708	1,621	1,563	1,520	1,488	1,463	1,442	1,411	1,379	1,346	1,239
150	0,990	1,896	1,780	1,703	1,647	1,605	1,572	1,546	1,506	1,465	1,423	1,288
200	0,900	1,406	1,359	1,326	1,302	1,284	1,269	1,257	1,239	1,219	1,199	1,130
200	0,950	1,551	1,484	1,438	1,404	1,379	1,358	1,342	1,316	1,290	1,263	1,170
200	0,975	1,691	1,603	1,543	1,500	1,467	1,441	1,420	1,388	1,355	1,320	1,205
200	0,990	1,874	1,757	1,678	1,622	1,579	1,546	1,518	1,477	1,435	1,391	1,247
∞	0,900	1,377	1,327	1,291	1,265	1,245	1,228	1,214	1,193	1,169	1,144	1,000
∞	0,950	1,509	1,438	1,389	1,353	1,325	1,302	1,283	1,254	1,223	1,189	1,000
∞	0,975	1,637	1,545	1,482	1,436	1,400	1,371	1,347	1,310	1,271	1,229	1,000
∞	0,990	1,805	1,683	1,601	1,540	1,494	1,457	1,427	1,381	1,331	1,279	1,000