Table C.4. 90th and 10th percentiles of beta (α, β) distribution.

		β for 90th %iles											
		0.1	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	
		1.00E+0	7.33E-1	3.49E-1	2.16E-1	1.55E-1	1.20E-1	9.84E-2	8.31E-2	7.20E-2	6.34E-2	5.67E-2	0.1
		[redacted]	9.76E-1	8.10E-1	6.49E-1	5.32E-1	4.48E-1	3.86E-1	3.39E-1	3.02E-1	2.72E-1	2.47E-1	0.5
	0.1	8.87E-8	[redacted]	9.00E-1	7.85E-1	6.84E-1	6.02E-1	5.36E-1	4.82E-1	4.38E-1	4.01E-1	3.69E-1	1.0
	0.5	3.46E-10	2.45E-2	[redacted]	8.44E-1	7.59E-1	6.85E-1	6.22E-1	5.68E-1	5.23E-1	4.84E-1	4.50E-1	1.5
	1.0	1.00E-10	1.00E-2	1.00E-1	[redacted]	8.04E-1	7.38E-1	6.80E-1	6.28E-1	5.84E-1	5.45E-1	5.10E-1	2.0
	1.5	5.60E-11	6.18E-3	6.78E-2	1.56E-1	[redacted]	7.75E-1	7.21E-1	6.73E-1	6.30E-1	5.92E-1	5.58E-1	2.5
	2.0	3.86E-11	4.46E-3	5.13E-2	1.23E-1	1.96E-1	[redacted]	7.53E-1	7.08E-1	6.67E-1	6.30E-1	5.96E-1	3.0
	2.5	2.93E-11	3.48E-3	4.13E-2	1.02E-1	1.65E-1	2.25E-1	[redacted]	7.36E-1	6.97E-1	6.61E-1	6.28E-1	3.5
	3.0	2.37E-11	2.86E-3	3.45E-2	8.64E-2	1.43E-1	1.97E-1	2.47E-1	[redacted]	7.21E-1	6.87E-1	6.55E-1	4.0
	3.5	1.98E-11	2.42E-3	2.97E-2	7.53E-2	1.26E-1	1.75E-1	2.21E-1	2.64E-1	[redacted]	7.09E-1	6.79E-1	4.5
	4.0	1.71E-11	2.10E-3	2.60E-2	6.66E-2	1.12E-1	1.58E-1	2.01E-1	2.41E-1	2.79E-1	[redacted]	6.99E-1	5.0
	4.5	1.50E-11	1.85E-3	2.31E-2	5.98E-2	1.01E-1	1.43E-1	1.84E-1	2.22E-1	2.58E-1	2.91E-1	[redacted]	
	5.	1.33E-11	1.66E-3	2.09E-2	5.42E-2	9.26E-2	1.32E-1	1.70E-1	2.06E-1	2.40E-1	2.71E-1	3.01E-1	
	6.	1.09E-11	1.37E-3	1.74E-2	4.57E-2	7.88E-2	1.13E-1	1.47E-1	1.79E-1	2.10E-1	2.40E-1	2.67E-1	
	7.	9.26E-12	1.17E-3	1.49E-2	3.95E-2	6.86E-2	9.91E-2	1.29E-1	1.59E-1	1.88E-1	2.15E-1	2.41E-1	
	8.	8.04E-12	1.02E-3	1.31E-2	3.48E-2	6.08E-2	8.82E-2	1.16E-1	1.43E-1	1.69E-1	1.95E-1	2.19E-1	
	9.	7.10E-12	9.02E-4	1.16E-2	3.11E-2	5.45E-2	7.95E-2	1.05E-1	1.30E-1	1.54E-1	1.78E-1	2.01E-1	
	10.	6.36E-12	8.09E-4	1.05E-2	2.81E-2	4.95E-2	7.23E-2	9.57E-2	1.19E-1	1.42E-1	1.64E-1	1.85E-1	
	12.5	5.04E-12	6.44E-4	8.39E-3	2.27E-2	4.01E-2	5.90E-2	7.86E-2	9.82E-2	1.18E-1	1.37E-1	1.55E-1	
	15.	4.17E-12	5.35E-4	7.00E-3	1.90E-2	3.37E-2	4.99E-2	6.67E-2	8.37E-2	1.01E-1	1.17E-1	1.34E-1	
	20.	3.11E-12	4.00E-4	5.25E-3	1.43E-2	2.56E-2	3.81E-2	5.12E-2	6.46E-2	7.81E-2	9.16E-2	1.05E-1	
	30.	2.06E-12	2.65E-4	3.51E-3	9.61E-3	1.73E-2	2.59E-2	3.49E-2	4.43E-2	5.39E-2	6.36E-2	7.33E-2	
	50.	1.23E-12	1.59E-4	2.10E-3	5.80E-3	1.05E-2	1.57E-2	2.14E-2	2.73E-2	3.33E-2	3.95E-2	4.57E-2	
	100.	6.10E-13	7.91E-5	1.05E-3	2.91E-3	5.28E-3	7.96E-3	1.09E-2	1.39E-2	1.70E-2	2.03E-2	2.36E-2	
		0.1	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	
		α for 10th %iles											

β for 10th %iles

α for 90th %iles

For example, the 10th percentile of a beta(1.5, 10) distribution is 2.81E−2. The 90th percentile of the same distribution (from the table continuation on the next page) is 2.63E−1. If X has a beta(α, β) distributions with $\alpha > \beta$, use the relation $X = 1 - Y$, where Y has a beta(β, α) distribution. Thus, for example, the 10th and 90th percentiles of a beta(10, 1.5) distribution are 1 − 2.63E−1 = 0.737 and 1 − 2.81E−2 = 0.9719, respectively.

For a beta(α, β) distribution with $\beta >> \alpha$, the p quantile is approximated by $\chi^2_{0.05}(4)/[200+\chi^2_{0.05}(4)]$. For example, the 10th percentile of a beta(2,100) distribution, shown above as 5.28E−3, is approximated by $\chi^2_{0.10}(4)/[200+\chi^2_{0.10}(4)]$ = 1.064/201.064 = 5.29E−3. The 90th percentile, 3.80E−2, is approximated by 7.770/207.779 = 3.74E−2.

Table C.4 90th and 10th percentiles of beta (α, β) distribution (continued).

		β for 90th %iles											
		6.	7.	8.	9.	10.	12.5	15.	20.	30.	50.	100.	
		4.67E-2	3.98E-2	3.46E-2	3.06E-2	2.75E-2	2.18E-2	1.81E-2	1.35E-2	8.97E-3	5.36E-3	2.67E-3	0.1
		2.09E-1	1.81E-1	1.60E-1	1.43E-1	1.29E-1	1.05E-1	8.76E-2	6.62E-2	4.45E-2	2.68E-2	1.35E-2	0.5
		3.19E-1	2.80E-1	2.50E-1	2.26E-1	2.06E-1	1.68E-1	1.42E-1	1.09E-1	7.39E-2	4.50E-2	2.28E-2	1.0
		3.94E-1	3.51E-1	3.16E-1	2.87E-1	2.63E-1	2.18E-1	1.85E-1	1.43E-1	9.82E-2	6.03E-2	3.07E-2	1.5
		4.53E-1	4.06E-1	3.68E-1	3.37E-1	3.10E-1	2.59E-1	2.22E-1	1.73E-1	1.20E-1	7.41E-2	3.80E-2	2.0
		4.99E-1	4.52E-1	4.12E-1	3.79E-1	3.50E-1	2.95E-1	2.55E-1	2.00E-1	1.40E-1	8.70E-2	4.48E-2	2.5
		5.38E-1	4.90E-1	4.50E-1	4.15E-1	3.86E-1	3.27E-1	2.84E-1	2.24E-1	1.58E-1	9.91E-2	5.13E-2	3.0
		5.71E-1	5.23E-1	4.82E-1	4.47E-1	4.17E-1	3.56E-1	3.10E-1	2.47E-1	1.75E-1	1.11E-1	5.76E-2	3.5
		5.99E-1	5.52E-1	5.11E-1	4.75E-1	4.44E-1	3.82E-1	3.34E-1	2.68E-1	1.91E-1	1.22E-1	6.37E-2	4.0
		6.24E-1	5.77E-1	5.36E-1	5.01E-1	4.69E-1	4.06E-1	3.57E-1	2.87E-1	2.07E-1	1.32E-1	6.96E-2	4.5
		6.46E-1	5.99E-1	5.59E-1	5.23E-1	4.92E-1	4.27E-1	3.78E-1	3.06E-1	2.21E-1	1.43E-1	7.54E-2	5.
		6.82E-1	6.38E-1	5.98E-1	5.63E-1	5.32E-1	4.66E-1	4.15E-1	3.40E-1	2.49E-1	1.62E-1	8.65E-2	6.
		[redacted]	6.69E-1	6.31E-1	5.96E-1	5.65E-1	5.00E-1	4.48E-1	3.70E-1	2.74E-1	1.80E-1	9.72E-2	7.
	6.	3.18E-1	[redacted]	6.58E-1	6.25E-1	5.94E-1	5.29E-1	4.77E-1	3.97E-1	2.98E-1	1.98E-1	1.08E-1	8.
	7.	2.88E-1	3.31E-1	[redacted]	6.50E-1	6.20E-1	5.56E-1	5.03E-1	4.22E-1	3.19E-1	2.14E-1	1.18E-1	9.
	8.	2.64E-1	3.05E-1	3.42E-1	[redacted]	6.42E-1	5.79E-1	5.26E-1	4.45E-1	3.40E-1	2.30E-1	1.27E-1	10.
	9.	2.43E-1	2.82E-1	3.18E-1	3.50E-1	[redacted]	6.27E-1	5.76E-1	4.95E-1	3.85E-1	2.66E-1	1.50E-1	12.5
β for 10th %iles	10.	2.26E-1	2.63E-1	2.97E-1	3.29E-1	3.58E-1	[redacted]	6.16E-1	5.36E-1	4.25E-1	2.99E-1	1.72E-1	15.
	12.5	1.91E-1	2.25E-1	2.56E-1	2.85E-1	3.12E-1	3.73E-1	[redacted]	6.01E-1	4.89E-1	3.56E-1	2.11E-1	20.
	15.	1.66E-1	1.96E-1	2.25E-1	2.52E-1	2.77E-1	3.34E-1	3.84E-1	[redacted]	5.82E-1	4.45E-1	2.79E-1	30.
	20.	1.31E-1	1.57E-1	1.81E-1	2.04E-1	2.26E-1	2.78E-1	3.23E-1	3.99E-1	[redacted]	5.64E-1	3.83E-1	50.
	30.	9.26E-2	1.12E-1	1.30E-1	1.48E-1	1.66E-1	2.07E-1	2.45E-1	3.12E-1	4.18E-1	[redacted]	5.45E-1	100.
	50.	5.83E-2	7.09E-2	8.35E-2	9.59E-2	1.08E-1	1.38E-1	1.66E-1	2.18E-1	3.06E-1	4.36E-1	[redacted]	
	100.	3.03E-2	3.71E-2	4.40E-2	5.09E-2	5.78E-2	7.50E-2	9.19E-2	1.25E-1	1.84E-1	2.85E-1	4.55E-1	
		6.	7.	8.	9.	10.	12.5	15.	20.	30.	50.	100.	
		α for 10th %iles											

α for 90th %iles

Table C.5. 95th and 5th percentiles of beta (α, β) distribution.

		β for 95th %iles											
		0.1	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	
		1.00E+0	9.24E-1	5.99E-1	4.09E-1	3.06E-1	2.44E-1	2.02E-1	1.72E-1	1.50E-1	1.33E-1	1.19E-1	0.1
		[redacted]	9.94E-1	9.02E-1	7.71E-1	6.58E-1	5.69E-1	4.99E-1	4.44E-1	3.99E-1	3.62E-1	3.32E-1	0.5
β for 5th %iles	0.1	8.66E-11	[redacted]	9.50E-1	8.64E-1	7.76E-1	6.98E-1	6.32E-1	5.75E-1	5.27E-1	4.86E-1	4.51E-1	1.0
	0.5	3.38E-13	6.16E-3	[redacted]	9.03E-1	8.32E-1	7.64E-1	7.04E-1	6.51E-1	6.04E-1	5.63E-1	5.27E-1	1.5
	1.0	9.77E-14	2.50E-3	5.00E-2	[redacted]	8.65E-1	8.06E-1	7.51E-1	7.02E-1	6.57E-1	6.18E-1	5.82E-1	2.0
	1.5	5.46E-14	1.54E-3	3.36E-2	9.73E-2	[redacted]	8.35E-1	7.85E-1	7.39E-1	6.97E-1	6.59E-1	6.24E-1	2.5
	2.0	3.77E-14	1.11E-3	2.53E-2	7.60E-2	1.35E-1	[redacted]	8.11E-1	7.68E-1	7.29E-1	6.92E-1	6.59E-1	3.0
	2.5	2.87E-14	8.68E-4	2.03E-2	6.24E-2	1.13E-1	1.65E-1	[redacted]	7.91E-1	7.54E-1	7.19E-1	6.87E-1	3.5
	3.0	2.31E-14	7.12E-4	1.70E-2	5.30E-2	9.76E-2	1.44E-1	1.89E-1	[redacted]	7.75E-1	7.42E-1	7.11E-1	4.0
	3.5	1.94E-14	6.03E-4	1.45E-2	4.60E-2	8.57E-2	1.28E-1	1.69E-1	2.09E-1	[redacted]	7.61E-1	7.31E-1	4.5
	4.0	1.67E-14	5.23E-4	1.27E-2	4.07E-2	7.64E-2	1.15E-1	1.53E-1	1.90E-1	2.25E-1	[redacted]	7.49E-1	5.0
	4.5	1.46E-14	4.62E-4	1.13E-2	3.64E-2	6.90E-2	1.04E-1	1.40E-1	1.75E-1	2.08E-1	2.39E-1	[redacted]	
	5.	1.30E-14	4.13E-4	1.02E-2	3.30E-2	6.28E-2	9.55E-2	1.29E-1	1.61E-1	1.93E-1	2.23E-1	2.51E-1	
	6.	1.07E-14	3.42E-4	8.51E-3	2.78E-2	5.34E-2	8.18E-2	1.11E-1	1.40E-1	1.69E-1	1.96E-1	2.22E-1	
	7.	9.05E-15	2.91E-4	7.30E-3	2.40E-2	4.64E-2	7.15E-2	9.77E-2	1.24E-1	1.50E-1	1.75E-1	2.00E-1	
	8.	7.85E-15	2.54E-4	6.39E-3	2.11E-2	4.10E-2	6.36E-2	8.73E-2	1.11E-1	1.35E-1	1.58E-1	1.81E-1	
	9.	6.93E-15	2.25E-4	5.68E-3	1.89E-2	3.68E-2	5.72E-2	7.88E-2	1.01E-1	1.23E-1	1.45E-1	1.66E-1	
	10.	6.21E-15	2.02E-4	5.12E-3	1.70E-2	3.33E-2	5.20E-2	7.19E-2	9.22E-2	1.13E-1	1.33E-1	1.53E-1	
	12.5	4.92E-15	1.60E-4	4.10E-3	1.37E-2	2.70E-2	4.24E-2	5.89E-2	7.60E-2	9.33E-2	1.11E-1	1.28E-1	
	15.	4.08E-15	1.33E-4	3.41E-3	1.15E-2	2.27E-2	3.57E-2	4.99E-2	6.47E-2	7.97E-2	9.48E-2	1.10E-1	
	20.	3.03E-15	9.95E-5	2.56E-3	8.65E-3	1.72E-2	2.72E-2	3.82E-2	4.98E-2	6.17E-2	7.37E-2	8.59E-2	
	30.	2.01E-15	6.61E-5	1.71E-3	5.80E-3	1.16E-2	1.85E-2	2.60E-2	3.41E-2	4.25E-2	5.11E-2	5.98E-2	
	50.	1.20E-15	3.95E-5	1.03E-3	3.49E-3	7.01E-3	1.12E-2	1.59E-2	2.09E-2	2.62E-2	3.16E-2	3.72E-2	
	100.	5.96E-16	1.97E-5	5.13E-4	1.75E-3	3.53E-3	5.67E-3	8.06E-3	1.06E-2	1.34E-2	1.62E-2	1.91E-2	
		0.1	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	
		α for 5th %iles											

α for 95th %iles

For example, the 5th percentile of a beta(1.5, 10) distribution is 1.70E−2. The 95th percentile of the same distribution (from the table continuation on the next page) is 3.17E−1. If X has a beta(α, β) distributions with $\alpha > \beta$, use the relation $X = 1 - Y$, where Y has a beta(β, α) distribution. Thus, for example, the 5th and 95th percentiles of a beta(10, 1.5) distribution are 1 − 3.17E−1 = 0.683 and 1 − 1.70E−2 = 0.9830, respectively.

For a beta(α, β) distribution with $\beta >> \alpha$, the p quantile is approximated by $\chi^2_p(2\alpha) / [2\beta + \chi^2_p(2\alpha)]$. For example, the 5th percentile of a beta(2,100) distribution, shown here as 3.53E−3, is approximated by $\chi^2_{0.05}(4) / [200 + \chi^2_{0.05}(4)]$ = 0.711/200.711 = 3.54E−3. The 95th percentile, 4.61E−2, is approximated by 9.488/209.488 = 4.53E−2.

Table C.5 95th and 5th percentiles of beta (α, β) distribution (continued).

		β for 95th %iles											
		6.	7.	8.	9.	10.	12.5	15.	20.	30.	50.	100.	
		9.91E-2	8.47E-2	7.39E-2	6.56E-2	5.89E-2	4.70E-2	3.91E-2	2.92E-2	1.94E-2	1.16E-2	5.81E-3	0.1
		2.83E-1	2.47E-1	2.19E-1	1.97E-1	1.79E-1	1.45E-1	1.22E-1	9.27E-2	6.25E-2	3.79E-2	1.91E-2	0.5
		3.93E-1	3.48E-1	3.12E-1	2.83E-1	2.59E-1	2.13E-1	1.81E-1	1.39E-1	9.50E-2	5.82E-2	2.95E-2	1.0
		4.66E-1	4.17E-1	3.78E-1	3.45E-1	3.17E-1	2.64E-1	2.26E-1	1.76E-1	1.21E-1	7.48E-2	3.82E-2	1.5
		5.21E-1	4.71E-1	4.29E-1	3.94E-1	3.64E-1	3.06E-1	2.64E-1	2.07E-1	1.44E-1	8.97E-2	4.61E-2	2.0
		5.64E-1	5.14E-1	4.71E-1	4.35E-1	4.04E-1	3.42E-1	2.97E-1	2.34E-1	1.65E-1	1.03E-1	5.35E-2	2.5
		6.00E-1	5.50E-1	5.07E-1	4.70E-1	4.38E-1	3.74E-1	3.26E-1	2.59E-1	1.84E-1	1.16E-1	6.04E-2	3.0
		6.30E-1	5.80E-1	5.38E-1	5.01E-1	4.68E-1	4.02E-1	3.53E-1	2.82E-1	2.02E-1	1.28E-1	6.71E-2	3.5
		6.55E-1	6.07E-1	5.64E-1	5.27E-1	4.95E-1	4.28E-1	3.77E-1	3.04E-1	2.19E-1	1.40E-1	7.36E-2	4.0
		6.77E-1	6.30E-1	5.88E-1	5.51E-1	5.18E-1	4.51E-1	3.99E-1	3.23E-1	2.34E-1	1.51E-1	7.98E-2	4.5
		6.96E-1	6.50E-1	6.09E-1	5.73E-1	5.40E-1	4.72E-1	4.19E-1	3.42E-1	2.49E-1	1.62E-1	8.59E-2	5.
		7.29E-1	6.85E-1	6.45E-1	6.10E-1	5.77E-1	5.10E-1	4.56E-1	3.75E-1	2.77E-1	1.82E-1	9.75E-2	6.
		[redacted]	7.13E-1	6.75E-1	6.40E-1	6.09E-1	5.42E-1	4.87E-1	4.05E-1	3.03E-1	2.01E-1	1.09E-1	7.
	6.	2.71E-1	[redacted]	7.00E-1	6.67E-1	6.36E-1	5.70E-1	5.15E-1	4.32E-1	3.26E-1	2.18E-1	1.19E-1	8.
	7.	2.45E-1	2.87E-1	[redacted]	6.89E-1	6.59E-1	5.94E-1	5.40E-1	4.57E-1	3.48E-1	2.35E-1	1.30E-1	9.
	8.	2.24E-1	2.64E-1	3.00E-1	[redacted]	6.80E-1	6.16E-1	5.63E-1	4.79E-1	3.68E-1	2.51E-1	1.40E-1	10.
	9.	2.06E-1	2.44E-1	2.79E-1	3.11E-1	[redacted]	6.62E-1	6.10E-1	5.27E-1	4.13E-1	2.88E-1	1.63E-1	12.5
β for 5th %iles	10.	1.91E-1	2.27E-1	2.60E-1	2.91E-1	3.20E-1	[redacted]	6.48E-1	5.67E-1	4.52E-1	3.21E-1	1.85E-1	15.
	12.5	1.61E-1	1.93E-1	2.23E-1	2.52E-1	2.78E-1	3.38E-1	[redacted]	6.29E-1	5.15E-1	3.77E-1	2.25E-1	20.
	15.	1.40E-1	1.68E-1	1.96E-1	2.22E-1	2.46E-1	3.03E-1	3.52E-1	[redacted]	6.05E-1	4.65E-1	2.94E-1	30.
	20.	1.10E-1	1.34E-1	1.57E-1	1.79E-1	2.00E-1	2.50E-1	2.95E-1	3.71E-1	[redacted]	5.82E-1	3.98E-1	50.
	30.	7.74E-2	9.50E-2	1.12E-1	1.29E-1	1.46E-1	1.86E-1	2.23E-1	2.89E-1	3.95E-1	[redacted]	5.58E-1	100.
	50.	4.86E-2	6.02E-2	7.18E-2	8.34E-2	9.49E-2	1.23E-1	1.50E-1	2.01E-1	2.88E-1	4.18E-1	[redacted]	
	100.	2.52E-2	3.14E-2	3.77E-2	4.42E-2	5.06E-2	6.68E-2	8.29E-2	1.14E-1	1.73E-1	2.71E-1	4.42E-1	
		6.	7.	8.	9.	10.	12.5	15.	20.	30.	50.	100.	
		α for 5th %iles											

α for 95th %iles

Table C.6. 97.5th and 2.5th percentiles of beta (α, β) distribution.

β for 97.5th %iles										
0.1	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0

β for 2.5th %iles	α for 97.5th %iles											
		1.00E+0	9.80E-1	7.76E-1	5.84E-1	4.58E-1	3.74E-1	3.16E-1	2.72E-1	2.40E-1	2.14E-1	1.93E-1	0.1
		[redacted]	9.98E-1	9.51E-1	8.53E-1	7.53E-1	6.67E-1	5.95E-1	5.36E-1	4.86E-1	4.45E-1	4.10E-1	0.5
	0.1	8.46E-14	[redacted]	9.75E-1	9.15E-1	8.42E-1	7.71E-1	7.08E-1	6.51E-1	6.02E-1	5.59E-1	5.22E-1	1.0
	0.5	3.30E-16	1.54E-3	[redacted]	9.39E-1	8.82E-1	8.23E-1	7.67E-1	7.16E-1	6.70E-1	6.29E-1	5.91E-1	1.5
	1.0	9.54E-17	6.25E-4	2.50E-2	[redacted]	9.06E-1	8.55E-1	8.06E-1	7.59E-1	7.16E-1	6.77E-1	6.41E-1	2.0
	1.5	5.34E-17	3.86E-4	1.67E-2	6.08E-2	[redacted]	8.77E-1	8.33E-1	7.91E-1	7.51E-1	7.14E-1	6.79E-1	2.5
	2.0	3.68E-17	2.78E-4	1.26E-2	4.73E-2	9.43E-2	[redacted]	8.53E-1	8.14E-1	7.77E-1	7.42E-1	7.10E-1	3.0
	2.5	2.80E-17	2.17E-4	1.01E-2	3.87E-2	7.87E-2	1.23E-1	[redacted]	8.33E-1	7.98E-1	7.65E-1	7.34E-1	3.5
	3.0	2.26E-17	1.78E-4	8.40E-3	3.28E-2	6.76E-2	1.07E-1	1.47E-1	[redacted]	8.16E-1	7.85E-1	7.55E-1	4.0
	3.5	1.89E-17	1.51E-4	7.21E-3	2.85E-2	5.92E-2	9.44E-2	1.31E-1	1.67E-1	[redacted]	8.01E-1	7.73E-1	4.5
	4.0	1.63E-17	1.31E-4	6.31E-3	2.51E-2	5.27E-2	8.47E-2	1.18E-1	1.52E-1	1.84E-1	[redacted]	7.88E-1	5.0
	4.5	1.43E-17	1.15E-4	5.61E-3	2.25E-2	4.75E-2	7.68E-2	1.08E-1	1.39E-1	1.69E-1	1.99E-1	[redacted]	
	5.	1.27E-17	1.03E-4	5.05E-3	2.04E-2	4.33E-2	7.02E-2	9.90E-2	1.28E-1	1.57E-1	1.85E-1	2.12E-1	
	6.	1.04E-17	8.53E-5	4.21E-3	1.71E-2	3.67E-2	6.00E-2	8.52E-2	1.11E-1	1.37E-1	1.62E-1	1.87E-1	
	7.	8.83E-18	7.27E-5	3.61E-3	1.48E-2	3.19E-2	5.24E-2	7.49E-2	9.81E-2	1.22E-1	1.45E-1	1.67E-1	
	8.	7.67E-18	6.33E-5	3.16E-3	1.30E-2	2.81E-2	4.65E-2	6.67E-2	8.78E-2	1.09E-1	1.31E-1	1.52E-1	
	9.	6.77E-18	5.61E-5	2.81E-3	1.16E-2	2.52E-2	4.18E-2	6.02E-2	7.95E-2	9.92E-2	1.19E-1	1.39E-1	
	10.	6.06E-18	5.03E-5	2.53E-3	1.05E-2	2.28E-2	3.80E-2	5.49E-2	7.27E-2	9.09E-2	1.09E-1	1.28E-1	
	12.5	4.81E-18	4.01E-5	2.02E-3	8.43E-3	1.85E-2	3.09E-2	4.49E-2	5.98E-2	7.52E-2	9.08E-2	1.07E-1	
	15.	3.98E-18	3.33E-5	1.69E-3	7.05E-3	1.55E-2	2.61E-2	3.80E-2	5.08E-2	6.41E-2	7.77E-2	9.15E-2	
	20.	2.96E-18[a]	2.49E-5	1.27E-3	5.31E-3	1.17E-2	1.98E-2	2.91E-2	3.90E-2	4.95E-2	6.03E-2	7.13E-2	
	30.	1.96E-18	1.65E-5	8.44E-4	3.56E-3	7.91E-3	1.34E-2	1.98E-2	2.67E-2	3.40E-2	4.17E-2	4.95E-2	
	50.	1.17E-18	9.87E-6	5.06E-4	2.14E-3	4.78E-3	8.16E-3	1.21E-2	1.64E-2	2.09E-2	2.58E-2	3.08E-2	
	100.	5.82E-19[a]	4.92E-6	2.53E-4	1.08E-3	2.41E-3	4.12E-3	6.11E-3	8.31E-3	1.07E-2	1.32E-2	1.58E-2	
		0.1	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	
		α for 2.5th %iles											

a. May be inaccurate. Calculation had not converged after 100 iterations.

For example, the 2.5th percentile of a beta(1.5, 10) distribution is 1.05E−2. The 97.5th percentile of the same distribution (from the table continuation on the next page) is 3.67E−1. If X has a beta(α, β) distributions with $\alpha > \beta$, use the relation $X = 1 - Y$, where Y has a beta(β, α) distribution. Thus, for example, the 2.5th and 97.5th percentiles of a beta(10, 1.5) distribution are 1 − 3.67E−1 = 0.633 and 1 − 1.05E−2 = 0.9895, respectively.

For a beta(α, β) distribution with $\beta >> \alpha$, the p quantile is approximated by $\chi^2_p(2\alpha) / [2\beta + \chi^2_p(2\alpha)]$. For example, the 2.5th percentile of a beta(2,100) distribution, shown here as 2.41E−3, is approximated by $\chi^2_{0.025}(4) / [200 + \chi^2_{0.025}(4)]$ = 0.484/200.484 = 2.41E−3. The 97.5th percentile, 5.39E−2, is approximated by 11.14/211.14 = 5.28E−2.

Table C.6. 97.5th and 2.5th percentiles of beta (α, β) distribution (continued).

		β for 97.5th %iles											
		6.	7.	8.	9.	10.	12.5	15.	20.	30.	50.	100.	
		1.61E-1	1.38E-1	1.21E-1	1.08E-1	9.73E-2	7.79E-2	6.50E-2	4.88E-2	3.25E-2	1.95E-2	9.78E-3	0.1
		3.53E-1	3.10E-1	2.77E-1	2.49E-1	2.27E-1	1.85E-1	1.57E-1	1.19E-1	8.10E-2	4.92E-2	2.49E-2	0.5
		4.59E-1	4.10E-1	3.69E-1	3.36E-1	3.08E-1	2.56E-1	2.18E-1	1.68E-1	1.16E-1	7.11E-2	3.62E-2	1.0
		5.28E-1	4.76E-1	4.33E-1	3.97E-1	3.67E-1	3.07E-1	2.64E-1	2.06E-1	1.43E-1	8.88E-2	4.56E-2	1.5
		5.79E-1	5.27E-1	4.82E-1	4.45E-1	4.13E-1	3.49E-1	3.02E-1	2.38E-1	1.67E-1	1.04E-1	5.39E-2	2.0
		6.19E-1	5.67E-1	5.23E-1	4.84E-1	4.51E-1	3.85E-1	3.35E-1	2.66E-1	1.88E-1	1.19E-1	6.17E-2	2.5
		6.51E-1	6.00E-1	5.56E-1	5.18E-1	4.84E-1	4.16E-1	3.64E-1	2.92E-1	2.08E-1	1.32E-1	6.90E-2	3.0
		6.78E-1	6.28E-1	5.85E-1	5.47E-1	5.13E-1	4.44E-1	3.91E-1	3.15E-1	2.26E-1	1.45E-1	7.60E-2	3.5
		7.01E-1	6.52E-1	6.10E-1	5.72E-1	5.38E-1	4.68E-1	4.14E-1	3.36E-1	2.43E-1	1.57E-1	8.28E-2	4.0
		7.20E-1	6.74E-1	6.32E-1	5.94E-1	5.61E-1	4.91E-1	4.36E-1	3.56E-1	2.59E-1	1.68E-1	8.93E-2	4.5
		7.38E-1	6.92E-1	6.51E-1	6.14E-1	5.81E-1	5.11E-1	4.56E-1	3.74E-1	2.75E-1	1.79E-1	9.56E-2	5.
		7.66E-1	7.23E-1	6.84E-1	6.49E-1	6.16E-1	5.47E-1	4.91E-1	4.07E-1	3.03E-1	2.00E-1	1.08E-1	6.
		[redacted]	7.49E-1	7.11E-1	6.77E-1	6.46E-1	5.78E-1	5.22E-1	4.36E-1	3.28E-1	2.19E-1	1.19E-1	7.
	6.	2.34E-1	[redacted]	7.34E-1	7.01E-1	6.71E-1	6.04E-1	5.49E-1	4.63E-1	3.52E-1	2.37E-1	1.30E-1	8.
	7.	2.11E-1	2.51E-1	[redacted]	7.22E-1	6.92E-1	6.27E-1	5.73E-1	4.87E-1	3.73E-1	2.54E-1	1.41E-1	9.
	8.	1.92E-1	2.30E-1	2.66E-1	[redacted]	7.11E-1	6.48E-1	5.94E-1	5.08E-1	3.93E-1	2.70E-1	1.51E-1	10.
	9.	1.77E-1	2.13E-1	2.47E-1	2.78E-1	[redacted]	6.90E-1	6.39E-1	5.55E-1	4.38E-1	3.07E-1	1.75E-1	12.5
β for 2.5th %iles	10.	1.63E-1	1.98E-1	2.30E-1	2.60E-1	2.89E-1	[redacted]	6.75E-1	5.93E-1	4.76E-1	3.40E-1	1.97E-1	15.
	12.5	1.38E-1	1.68E-1	1.97E-1	2.24E-1	2.50E-1	3.10E-1	[redacted]	6.52E-1	5.38E-1	3.96E-1	2.38E-1	20.
	15.	1.19E-1	1.46E-1	1.72E-1	1.97E-1	2.21E-1	2.76E-1	3.25E-1	[redacted]	6.25E-1	4.83E-1	3.07E-1	30.
	20.	9.36E-2	1.16E-1	1.38E-1	1.59E-1	1.79E-1	2.28E-1	2.72E-1	3.48E-1	[redacted]	5.97E-1	4.10E-1	50.
	30.	6.56E-2	8.19E-2	9.83E-2	1.14E-1	1.30E-1	1.69E-1	2.05E-1	2.70E-1	3.75E-1	[redacted]	5.69E-1	100.
	50.	4.11E-2	5.18E-2	6.26E-2	7.35E-2	8.44E-2	1.11E-1	1.38E-1	1.87E-1	2.73E-1	4.03E-1	[redacted]	
	100.	2.13E-2	2.70E-2	3.28E-2	3.88E-2	4.49E-2	6.02E-2	7.56E-2	1.06E-1	1.63E-1	2.60E-1	4.31E-1	
		6.	7.	8.	9.	10.	12.5	15.	20.	30.	50.	100.	
		α for 2.5th %iles											

α for 97.5th %iles