

Critical Values for the Two-sample Kolmogorov-Smirnov test (2-sided)

Table gives critical D -values for $\alpha = 0.05$ (upper value) and $\alpha = 0.01$ (lower value) for various sample sizes. * means you cannot reject H_0 regardless of observed D .

$n_2 \backslash n_1$	3	4	5	6	7	8	9	10	11	12
1	*	*	*	*	*	*	*	*	*	*
2	*	*	*	*	*	16/16	18/18	20/20	22/22	24/24
3	*	*	15/15	18/18	21/21	21/24	24/27	27/30	30/33	30/36
4		16/16	20/20	20/24	24/28	28/32	28/36	30/40	33/44	36/48
5			*	24/30	30/35	30/40	35/45	40/50	39/55	43/60
6				30/36	30/42	34/48	39/54	40/60	43/66	48/72
7					42/49	40/56	42/63	46/70	48/77	53/84
8						48/64	46/72	48/80	53/88	60/96
9							54/81	53/90	59/99	63/108
10								70/100	60/110	66/120
11								80/100	77/110	80/120
12									77/121	72/132
									88/121	86/132
										96/144
										84/144

For larger sample sizes, the approximate critical value D_α is given by the equation

$$D_\alpha = c(\alpha) \sqrt{\frac{n_1 + n_2}{n_1 n_2}}$$

where the coefficient is given by the table below.

α	0.10	0.05	0.025	0.01	0.005	0.001
$c(\alpha)$	1.22	1.36	1.48	1.63	1.73	1.95

Examples: (1) At $\alpha = 0.05$ and samples sizes 5 and 8, $D_\alpha = 30/40 = 0.75$.

(2) At $\alpha = 0.01$ and samples sizes 15 and 28, $D_\alpha = 1.63 \sqrt{\frac{15 + 28}{15 \cdot 28}} = 0.522$.