Table 1: Critical values for the Mann-Whitney (Wilcoxon) statistic.
This table presents upper one-sided and two-sided critical values for the Mann-Whitney U statistic. Lower one-sided critical values are computed from the upper one-sided critical value (at the same significance level) as $(M \cdot N) - U$. The Wilcoxon two-sample statistic, W, is related to U by the equation $W = (M \cdot N) + (M \cdot (M+1)/2) - U$, where W is the sum of the ranks of the sample of size

		One-sided α					
		.10	.05	.025	.01	.005	.001
		Two-sided α					
		.20	.10	.05	.02	.01	.002
n	m						
3	2	6	—	—	—	—	—
3	3	8	9	—	—	—	—
4	2	8	—	—	—	—	—
4	3	11	12	—	—	—	—
4	4	13	15	16	—	—	—
5	2	9	10	—	—	—	—
5	3	13	14	15	—	—	—
5	4	16	18	19	20	—	—
5	5	20	21	23	24	25	—
6	2	11	12	—	—	—	—
6	3	15	16	17	—	—	—
6	4	19	21	22	23	24	—
6	5	23	25	27	28	29	—
6	6	27	29	31	33	34	—
7	2	13	14	—	—	—	—
7	3	17	19	20	21	—	—
7	4	22	24	25	27	28	—
7	5	27	29	30	32	34	—
7	6	31	34	36	38	39	42
7	7	36	38	41	43	45	48
8	2	14	15	16	—	—	—
8	3	19	21	22	24	—	—
8	4	25	27	28	30	31	—
8	5	30	32	34	36	38	40
8	6	35	38	40	42	44	47
8	7	40	43	46	49	50	54
8	8	45	49	51	55	57	60
9	1	9	—	—	—	—	—
9	2	16	17	18	—	—	—
9	3	22	23	25	26	27	—
9	4	27	30	32	33	35	—
9	5	33	36	38	40	42	44
9	6	39	42	44	47	49	52
9	7	45	48	51	54	56	60
9	8	50	54	57	61	63	67
9	9	56	60	64	67	70	74
10	1	10	—	—	—	—	—
10	2	17	19	20	—	—	—
10	3	24	26	27	29	30	—
10	4	30	33	35	37	38	40
10	5	37	39	42	44	46	49
10	6	43	46	49	52	54	57
10	7	49	53	56	59	61	65
10	8	56	60	63	67	69	74
10	9	62	66	70	74	77	82