

Mann-Whitney U Critical Values — Two-Tailed $\alpha = 0.05$ | One-Tailed $\alpha = 0.025$

The most widely used significance level in social, behavioural, and educational research. Use this table for **two-tailed tests** at $\alpha = 0.05$ and for **one-tailed tests** at $\alpha = 0.025$. Reject H_0 when $U = \min(U_1, U_2) \leq$ the tabled critical value. A dash (—) means the sample size is too small to achieve significance at this α level.

Decision: $U \leq U_{critical} \Rightarrow$ Reject H_0

$$U_1 = n_1 n_2 + n_1(n_1+1)/2 - R_1 \quad | \quad U_2 = n_1 n_2 + n_2(n_2+1)/2 - R_2 \quad | \quad U = \min(U_1, U_2) \quad | \quad \text{Verify: } U_1 + U_2 = n_1 \times n_2$$

$n_1 \setminus n_2$	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8
3	—	—	—	0	1	2	3	4	4	5	6	7	8	9	10	11	11	12	13	14
4	—	—	0	1	2	3	5	6	7	8	9	11	12	13	14	15	17	18	19	20
5	—	0	1	2	4	5	6	8	9	11	12	13	15	16	18	19	20	22	23	25
6	—	1	2	3	5	7	8	10	12	14	16	17	19	21	23	25	26	28	30	32
7	—	1	3	5	6	8	11	13	15	17	19	21	24	26	28	30	33	35	37	39
8	—	2	4	6	8	10	13	15	18	20	23	26	28	31	33	36	39	41	44	47
9	—	2	4	7	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
10	—	3	5	8	11	14	17	20	24	27	31	34	37	41	44	48	51	55	58	62
11	—	3	6	9	12	16	19	23	27	31	34	38	42	46	50	54	57	61	65	69
12	—	4	7	11	13	17	21	26	30	34	38	42	47	51	55	60	64	68	72	77
13	—	4	8	12	15	19	24	28	33	37	42	47	51	56	61	65	70	75	80	84
14	—	5	9	13	16	21	26	31	36	41	46	51	56	61	66	71	77	82	87	92
15	—	5	10	14	18	23	28	33	39	44	50	55	61	66	72	77	83	88	94	100
16	—	6	11	15	19	25	30	36	42	48	54	60	65	71	77	83	89	95	101	107
17	—	6	11	17	20	26	33	39	45	51	57	64	70	77	83	89	96	102	109	115
18	—	7	12	18	22	28	35	41	48	55	61	68	75	82	88	95	102	109	116	123
19	—	7	13	19	23	30	37	44	51	58	65	72	80	87	94	101	109	116	123	130
20	—	8	14	20	25	32	39	47	54	62	69	77	84	92	100	107	115	123	130	138

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