

Reference: Epstein, R.A. (1977). The theory of Gambling and Statistical Logic, 255-260. Academic Press.

Probability of Length of Longest suit in a Hand

Length of Longest Suit	Probability (suits unspecified)	Probability (suits specified)
4	0.351	0.052
5	0.443	0.032
6	0.165	0.011
7	0.035	1 in 355
8	1 in 214	1 in 3,007
9	1 in 2,703	1 in 31,338
10	1 in 60,606	1 in 632,911
11	1 in 2,747,253	1 in 32,679,739
12	1 in 313,479,624	1 in 3,703,703,704
13	1 in 158,730,158,700	1 in 625,000,000,000

Probability of Obtaining a Type of Hand

Type of Hand	Probability (suits unspecified)	Probability (suits specified)
Void	0.051	0.013
Singleton	0.306	0.022
Doubleton	0.538	0.046

Probability of Length of Longest suit in a 26 Card Coalition

Length of Longest Suit	Probability (suits unspecified)
7	0.157
8	0.457
9	0.281
10	0.087
11	0.016
12	1 in 633
13	1 in 16,667

Probability Distributions of Suit Lengths

Length of Longest Suit	Probability (13 card hand)	Probability (26 card coalition)
0	0.013	1 in 62,500
1	0.08	1 in 2,500
2	0.206	0.004
3	0.286	0.022
4	0.239	0.074
5	0.125	0.162
6	0.042	0.238
7	0.009	0.238
8	0.001	0.162
9	1 in 10,753	0.074
10	1 in 243,902	0.022
11	1 in 10,989,011	0.004
12	1 in 1,250,000,000	1 in 2,500
13	1 in 625,000,000,000	1 in 62,500

Probability of Obtaining k Cards of a Specific Rank

Number of k Cards	Probability (13 card hand)	Probability (26 card coalition)
0	0.304	0.055
1	0.439	0.25
2	0.213	0.39
3	0.041	0.25
4	0.003	0.055

Probability Distribution of Any Specific rank

Distribution	Probability (players unspecified)	Probability (players specified)
2-1-1-0	0.584	0.049
3-1-0-0	0.165	0.014
2-2-0-0	0.135	0.022
1-1-1-1	0.106	0.106
4-0-0-0	0.011	0.003