

5 cards in

hand.

(1) 4 of a kind and a random card.

2) 3 of a kind and a pair = 3744 ways

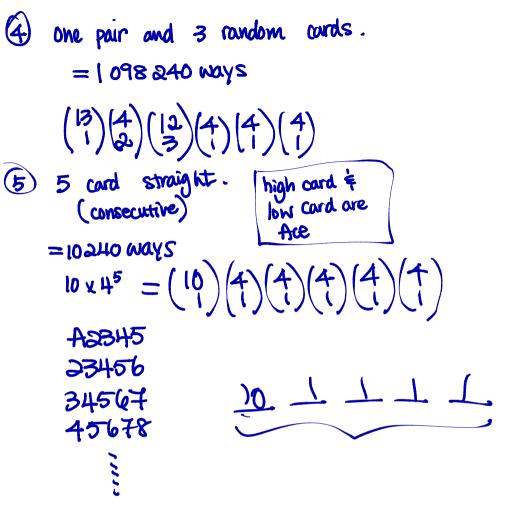
AAABB (13)(12)(12)

3 2 pairs and a random card.

AABBC = 123552 wongs

$$\frac{\binom{13}{1}\binom{4}{2}\binom{13}{1}\binom{4}{2}\binom{11}{1}\binom{4}{1}}{\binom{n+1}{1}}\frac{\binom{n+1}{1}}{\binom{n+1}{1}}\frac{\binom{n+1}{1}}{\binom{n+1}{1}}\frac{\binom{n+1}{1}}{\binom{n+1}{1}}$$

OR. (3)(1)(1) OR (3)(1)(2)(1)(3)



LOJOKA

Hand	Distinct hands	Frequency	Probability	Cumulative probability	Odds	Mathematical expression of absolute frequency
Royal flush	1	4	0.000154%	0.000154%	649,739 : 1	$\binom{4}{1}$
Straight flush (excluding royal flush)	9	36	0.00139%	0.0015%	72,192 : 1	$\binom{10}{1}\binom{4}{1}-\binom{4}{1}$
Four of a kind	156	624	0.0240%	0.0256%	4,164 : 1	$\binom{13}{1}\binom{12}{1}\binom{4}{1}$
Full house	156	3,744	0.1441%	0.17%	693 : 1	$\binom{13}{1}\binom{4}{3}\binom{12}{1}\binom{4}{2}$
Flush (excluding royal flush and straight flush)	1,277	5,108	0.1965%	0.367%	508:1	$\binom{13}{5}\binom{4}{1}-\binom{10}{1}\binom{4}{1}$
Straight (excluding royal flush and straight flush)	10	10,200	0.3925%	0.76%	254 : 1	$\binom{10}{1}\binom{4}{1}^5-\binom{10}{1}\binom{4}{1}$
Three of a kind	858	54,912	2.1128%	2.87%	46.3 : 1	$\binom{13}{1}\binom{4}{3}\binom{12}{2}\binom{4}{1}^2$
Two pair	858	123,552	4.7539%	7.62%	20.0 : 1	$\binom{13}{2}\binom{4}{2}^2\binom{11}{1}\binom{4}{1}$
One pair	2,860	1,098,240	42.2569%	49.9%	1.37 : 1	$\binom{13}{1}\binom{4}{2}\binom{12}{3}\binom{4}{1}^3$
No pair / High card	1,277	1,302,540	50.1177%	100%	0.995 : 1	$\left[\binom{13}{5}-10\right]\left[\binom{4}{1}^5-4\right]$
Total	7,462	2,598,960	100%		0:1	$\binom{52}{5}$