

Poker hands

How many ways to get: (Total hands: $C(52,5) = 2,598,960$)

One pair <i>aa b c d</i>	$C(13,4) \cdot C(4,1) \cdot C(4,2) \cdot C(4,1) \cdot C(4,1) \cdot C(4,1) = 1,098,240$	
Two pairs <i>aa bb c</i>	$C(13,3) \cdot C(3,2) \cdot C(4,2) \cdot C(4,2) \cdot C(4,1)$	= 123,552
Three of a kind <i>aaa b c</i>	$C(13,3) \cdot C(3,1) \cdot C(4,3) \cdot C(4,1) \cdot C(4,1)$	= 54,912
Straight	$C(10,1) \cdot C(4,1) \cdot C(4,1) \cdot C(4,1) \cdot C(4,1) \cdot C(4,1)$	= 10,240 – 40
Flush	$C(4,1) \cdot C(13,5)$	= 5,108 – 40
Full house <i>aaa bb</i>	$C(13,2) \cdot C(2,1) \cdot C(4,3) \cdot C(4,2)$	= 3,744
Four of a kind <i>aaaa b</i>	$C(13,2) \cdot C(2,1) \cdot C(4,4) \cdot C(4,1)$	= 624
Straight flush	$C(4,1) \cdot C(10,1)$ (or $C(10,1) \cdot C(4,1)$)	= 40 – 4
Royal flush	$C(4,1) \cdot 1$	= 4

Colors Choose the numbers.

Choose the suit.

Choose starting value of straight.