Desk of 30.

1. Two identical complete decks of cards, each contains 30 cards, have been mixed together.   
 A hand of 5 cards is picked uniformly at random from amongst all subsets of exactly 5 cards.  
 Identical cards are cards with the same suit and value.   
 For example, the hand (Q♥, 5♠, 6♠, 8♣, Q♥) has identical cards.)  
  
What is the probability that the hand has exactly 1 pair(s) of identical cards?  
  
( C(1, 30) \* C(3, 29) \* ( C(1, 2)^3 ) ) / C(5, 30 \* 2)  
  
Answer: 160 (0.16057091882247992)

2. Two identical complete decks of cards, each contains 30 cards, have been mixed together.   
 A hand of 5 cards is picked uniformly at random from amongst all subsets of exactly 5 cards.  
 Identical cards are cards with the same suit and value.   
 For example, the hand (Q♥, 5♠, 6♠, 8♣, Q♥) has identical cards.)  
  
What is the probability that the hand has exactly 2 pair(s) of identical cards?  
  
( C(2, 30) \* C(1, 28) \* ( C(1, 2)^1 ) ) / C(5, 30 \* 2)  
  
Answer: 004 (0.0044603033006244425)

3. Two identical complete decks of cards, each contains 30 cards, have been mixed together.   
 A hand of 6 cards is picked uniformly at random from amongst all subsets of exactly 6 cards.  
 Identical cards are cards with the same suit and value.   
 For example, the hand (Q♥, 5♠, 6♠, 8♣, Q♥) has identical cards.)  
  
What is the probability that the hand has exactly 1 pair(s) of identical cards?  
  
( C(1, 30) \* C(4, 29) \* ( C(1, 2)^4 ) ) / C(6, 30 \* 2)  
  
Answer: 227 (0.22771875760278973)

4. Two identical complete decks of cards, each contains 30 cards, have been mixed together.   
 A hand of 6 cards is picked uniformly at random from amongst all subsets of exactly 6 cards.  
 Identical cards are cards with the same suit and value.   
 For example, the hand (Q♥, 5♠, 6♠, 8♣, Q♥) has identical cards.)  
  
What is the probability that the hand has exactly 2 pair(s) of identical cards?  
  
( C(2, 30) \* C(2, 28) \* ( C(1, 2)^2 ) ) / C(6, 30 \* 2)  
  
Answer: 013 (0.013137620630930175)

5. Two identical complete decks of cards, each contains 30 cards, have been mixed together.   
 A hand of 6 cards is picked uniformly at random from amongst all subsets of exactly 6 cards.  
 Identical cards are cards with the same suit and value.   
 For example, the hand (Q♥, 5♠, 6♠, 8♣, Q♥) has identical cards.)  
  
What is the probability that the hand has exactly 3 pair(s) of identical cards?  
  
( C(3, 30) \* C(0, 27) \* ( C(1, 2)^0 ) ) / C(6, 30 \* 2)  
  
Answer: 109 (8.109642364771714e-05)

6. Two identical complete decks of cards, each contains 30 cards, have been mixed together.   
 A hand of 7 cards is picked uniformly at random from amongst all subsets of exactly 7 cards.  
 Identical cards are cards with the same suit and value.   
 For example, the hand (Q♥, 5♠, 6♠, 8♣, Q♥) has identical cards.)  
  
What is the probability that the hand has exactly 1 pair(s) of identical cards?  
  
( C(1, 30) \* C(5, 29) \* ( C(1, 2)^5 ) ) / C(7, 30 \* 2)  
  
Answer: 295 (0.2951909820776904)

7. Two identical complete decks of cards, each contains 30 cards, have been mixed together.   
 A hand of 7 cards is picked uniformly at random from amongst all subsets of exactly 7 cards.  
 Identical cards are cards with the same suit and value.   
 For example, the hand (Q♥, 5♠, 6♠, 8♣, Q♥) has identical cards.)  
  
What is the probability that the hand has exactly 2 pair(s) of identical cards?  
  
( C(2, 30) \* C(3, 28) \* ( C(1, 2)^3 ) ) / C(7, 30 \* 2)  
  
Answer: 029 (0.02951909820776904)

8. Two identical complete decks of cards, each contains 30 cards, have been mixed together.   
 A hand of 7 cards is picked uniformly at random from amongst all subsets of exactly 7 cards.  
 Identical cards are cards with the same suit and value.   
 For example, the hand (Q♥, 5♠, 6♠, 8♣, Q♥) has identical cards.)  
  
What is the probability that the hand has exactly 3 pair(s) of identical cards?  
  
( C(3, 30) \* C(1, 27) \* ( C(1, 2)^1 ) ) / C(7, 30 \* 2)  
  
Answer: 000 (0.0005676749655340199)

Desk of 44.

1. Two identical complete decks of cards, each contains 44 cards, have been mixed together.   
 A hand of 5 cards is picked uniformly at random from amongst all subsets of exactly 5 cards.  
 Identical cards are cards with the same suit and value.   
 For example, the hand (Q♥, 5♠, 6♠, 8♣, Q♥) has identical cards.)  
  
What is the probability that the hand has exactly 1 pair(s) of identical cards?  
  
( C(1, 44) \* C(3, 43) \* ( C(1, 2)^3 ) ) / C(5, 44 \* 2)  
  
Answer: 110 (0.11088573360378634)

2. Two identical complete decks of cards, each contains 44 cards, have been mixed together.   
 A hand of 5 cards is picked uniformly at random from amongst all subsets of exactly 5 cards.  
 Identical cards are cards with the same suit and value.   
 For example, the hand (Q♥, 5♠, 6♠, 8♣, Q♥) has identical cards.)  
  
What is the probability that the hand has exactly 2 pair(s) of identical cards?  
  
( C(2, 44) \* C(1, 42) \* ( C(1, 2)^1 ) ) / C(5, 44 \* 2)  
  
Answer: 002 (0.002028397565922921)

3. Two identical complete decks of cards, each contains 44 cards, have been mixed together.   
 A hand of 6 cards is picked uniformly at random from amongst all subsets of exactly 6 cards.  
 Identical cards are cards with the same suit and value.   
 For example, the hand (Q♥, 5♠, 6♠, 8♣, Q♥) has identical cards.)  
  
What is the probability that the hand has exactly 1 pair(s) of identical cards?  
  
( C(1, 44) \* C(4, 43) \* ( C(1, 2)^4 ) ) / C(6, 44 \* 2)  
  
Answer: 160 (0.16031672328258267)

4. Two identical complete decks of cards, each contains 44 cards, have been mixed together.   
 A hand of 6 cards is picked uniformly at random from amongst all subsets of exactly 6 cards.  
 Identical cards are cards with the same suit and value.   
 For example, the hand (Q♥, 5♠, 6♠, 8♣, Q♥) has identical cards.)  
  
What is the probability that the hand has exactly 2 pair(s) of identical cards?  
  
( C(2, 44) \* C(2, 42) \* ( C(1, 2)^2 ) ) / C(6, 44 \* 2)  
  
Answer: 006 (0.00601187712309685)

5. Two identical complete decks of cards, each contains 44 cards, have been mixed together.   
 A hand of 6 cards is picked uniformly at random from amongst all subsets of exactly 6 cards.  
 Identical cards are cards with the same suit and value.   
 For example, the hand (Q♥, 5♠, 6♠, 8♣, Q♥) has identical cards.)  
  
What is the probability that the hand has exactly 3 pair(s) of identical cards?  
  
( C(3, 44) \* C(0, 41) \* ( C(1, 2)^0 ) ) / C(6, 44 \* 2)  
  
Answer: 443 (2.4438524890637603e-05)

6. Two identical complete decks of cards, each contains 44 cards, have been mixed together.   
 A hand of 7 cards is picked uniformly at random from amongst all subsets of exactly 7 cards.  
 Identical cards are cards with the same suit and value.   
 For example, the hand (Q♥, 5♠, 6♠, 8♣, Q♥) has identical cards.)  
  
What is the probability that the hand has exactly 1 pair(s) of identical cards?  
  
( C(1, 44) \* C(5, 43) \* ( C(1, 2)^5 ) ) / C(7, 44 \* 2)  
  
Answer: 213 (0.21349495344461009)

7. Two identical complete decks of cards, each contains 44 cards, have been mixed together.   
 A hand of 7 cards is picked uniformly at random from amongst all subsets of exactly 7 cards.  
 Identical cards are cards with the same suit and value.   
 For example, the hand (Q♥, 5♠, 6♠, 8♣, Q♥) has identical cards.)  
  
What is the probability that the hand has exactly 2 pair(s) of identical cards?  
  
( C(2, 44) \* C(3, 42) \* ( C(1, 2)^3 ) ) / C(7, 44 \* 2)  
  
Answer: 013 (0.013685573938757056)

8. Two identical complete decks of cards, each contains 44 cards, have been mixed together.   
 A hand of 7 cards is picked uniformly at random from amongst all subsets of exactly 7 cards.  
 Identical cards are cards with the same suit and value.   
 For example, the hand (Q♥, 5♠, 6♠, 8♣, Q♥) has identical cards.)  
  
What is the probability that the hand has exactly 3 pair(s) of identical cards?  
  
( C(3, 44) \* C(1, 41) \* ( C(1, 2)^1 ) ) / C(7, 44 \* 2)  
  
Answer: 000 (0.00017106967423446322)