A deck of cards has 52 cards, 13 numbers (A, 2, 3, 4, 5, 6, 7, 8, 9, 10, J, Q, K), 4 suits (spades, clubs, hearts, diamonds). A poker hand consists of 5 cards from the deck. A pair means two cards have the same number. Three of a kind, means three of the same number, similarly defined for four of a kind. A Full House is when the poker hand consists of a three-of-a-kind and a pair (example AA222). A straight means you have five consecutive numbers, the first possible straight is A – 2 – 3 – 4 – 5, the last one is 10 – J – Q – K – A. A flush means the five cards are of the same suit. A straight flush means the hand is both a flush and a straight.

1. How many poker hands are there? (For example, one poker hand is A of hearts, 2 of spades, J of hearts, 5 of clubs and A of diamonds.)
2. How many poker hands are there with just one pair?

3. How many poker hands with two pairs are there?
4. How many poker hands with three of a kind are there (and not a full house)?

5. How many poker hands with four of a kind are there?
6. How many poker hands are a full house?

7. How many poker hands are a straight flush?
8. How many poker hands are a straight but not a flush?

9. How many poker hands are a flush but not a straight?
10. How many poker hands are left (no pair, no flush, no straight)?

11. Can you give a hierarchy to the poker hands from less common to most common?