



3. A *full house* is a hand consisting of three cards of one rank and two cards of a different rank. An example would be  $2\heartsuit-2\diamondsuit-2\spadesuit-9\diamondsuit-9\heartsuit$ . Imagine you choose five cards at random from a 52-card deck. How many different ways can you obtain a full house are there?
4. You select five cards at random from a 52-card deck, but don't look at them immediately. You look at the first two cards and see that they match in rank (i.e., you have a pair). Given this information, what is the conditional probability that your entire hand is a two-pair hand?
5. You select five cards at random from a 52-card deck, but don't look at them immediately. You look at the first two cards and see that they match in rank (i.e. you have a pair). Given this information, what is the conditional probability that your entire hand is a full house?