§2.7 #3. Suppose we lay out one hand of 5 cards. How many different ways we can rearrange them is equivalent to asking what $P(5,5)$ is. This is $5! = 120$. Now given 52 cards, we can deal out $52 * 51 * 50 * 49 * 48 = 311875200$ different 5 card piles by the multiplication principle. But, by the solution to the first part of the problem, each one of these has 119 other equivalent piles (where the cards are the same but dealt in a different order). The division principle then says that there are $311875200/120 = 2598960$ distinct hands.