

1. A couple with three children is arranging themselves for a picture. The children stand in a line in front of their parents.
 - a. (2 pts.) How many different ways can the family line up?

 - b. What is the probability that Mom is standing on the right in the back row?

2. (2 pts.) A coin is tossed six times. What is the probability of obtaining exactly 4 heads and 2 tails?

3. (2 pts.) A jar holds 10 marbles -- 6 red and 4 green. If we pick 4 marbles out of the jar what is the probability that none of them are red?

4. (2 pts.) 500 people were surveyed. 400 had been to a football game, 200 to a basketball game and 50 to neither. What is the probability that if a person had been to a basketball game, they had also been to a football game?