1. List the sample space for the experiment that consists of flipping a fair coin and observing the up face, and then tossing a fair die and observing the up face.
2. List the sample space for the experiment that consists of flipping two fair coins and observing the up face on each.
3. List the sample space for the experiment that consists of tossing a pair of fair dice and observing the up face on each.
4. Two cards are drawn at random from a well-shuffled standard deck of 52 playing cards.
a. Determine the number of outcomes in the sample space of this experiment if the first card is replaced before the second card is drawn.
b. Determine the number of outcomes in the sample space of this experiment if the first card is NOT replaced before the second card is drawn.
5. Four marbles are drawn at random from a bag containing 7 black marbles and 10 red marbles.
a. Determine the number of outcomes in the sample space of this experiment if the marbles are drawn without replacement.
b. Determine the number of outcomes if there must be 2 of each marble.
c. Determine the number of outcomes if there must be at least 2 red marbles.
