# Section 4.1 Worksheet - - - Intro to Probability

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1. What is the probability of choosing a King from a standard deck of 52 playing cards?
2. What is the probability of choosing a green marble from a jar containing 5 red, 6 green and 4 blue marbles?
3. What is the probability of choosing a marble that is not blue in problem 2?
4. What is the probability of getting an odd number when rolling a single 6-sided die?
5. What is the probability of choosing a jack or a queen from a standard deck of 52 cards?
6. What is the probability of landing on an odd number after spinning a spinner with 7 equal sectors numbered 1 through 7?
7. What is the probability of choosing a queen, a king or an ace from a standard deck of playing cards?
8. A national survey was taken measuring the highest level of educational achievement among adults age 30 and over. Express each probability to the nearest .001.

| Highest level of education | Women | Men | Total |
|---|---|---|---|
| 8th grade or less | 35 | 46 | 81 |
| High school graduate | 232 | 305 | 537 |
| Some college | 419 | 374 | 793 |
| Bachelor's degree | 539 | 463 | 1002 |
| Graduate or professional degree | 377 | 382 | 759 |
| Total | 1602 | 1570 | 3172 |

   **a)** What is the probability that a randomly chosen person from the survey group is a man?
   **b)** What is the probability that the highest level of education completed by a randomly chosen person from the survey group is a bachelors degree?
   **c)** What is the probability that a randomly chosen woman has earned a bachelor's or graduate degree?
   **d)** What is the probability that a randomly chosen person whose highest level of education is high school is a man?

9. Two fair dice are rolled.

**a)** What is the probability that the second die lands on a higher value than does the first?
**b)** What is the probability that the sum of the values is a prime number?
**c)** What is the probability the sum of the digits is a prime assuming the first dice rolled a value of either 3 or a 4.
**d)** What is the probability that the sum of the dice is 9?

**SECOND ROLL**

| FIRST ROLL | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1 | (1,1) | (1,2) | (1,3) | (1,4) | (1,5) | (1,6) |
| 2 | (2,1) | (2, 2) | (2,3) | (2,4) | (2,5) | (2,6) |
| 3 | (3,1) | (3,2) | (3,3) | (3,4) | (3,5) | (3,6) |
| 4 | (4,1) | (4,2) | (4,3) | (4,4) | (4,5) | (4,6) |
| 5 | (5,1) | (5,2) | (5,3) | (5,4) | (5,5) | (5,6) |
| 6 | (6,1) | (6,2) | (6,3) | (6,4) | (6,5) | (6,6) |