

AFM Worksheet
1-4 Introduction to Probability

Name: KROOKS
Date: _____ Period: _____

Express each probability to three decimal places.

1) A six-sided die is rolled.

a) What's the probability of rolling a two? $\frac{1}{6} = 0.166 = 16.\overline{6}\%$

b) What's the probability of rolling a five? $\frac{1}{6} = 0.166 = 16.\overline{6}\%$

c) What's the probability of rolling a two OR a five? $\frac{1}{6} + \frac{1}{6} = \frac{2}{6} = 0.333 = 33.\overline{3}\%$

2) The following (incomplete) table shows a random sample of 100 hikers and the areas of hiking they prefer:

	Coastline	Near lakes and streams	On mountain peaks	Totals
Male	18	16	11	45
Female	16	25	14	55
Totals	34	41	25	100

a) Complete the table.

b) What's the probability that a hiker is a female?

$$\frac{55}{100} = 0.55 = 55\%$$

c) What's the probability a male hiker prefers to hike on mountain peaks?

$$\frac{11}{45} = 0.244 = 24.4\%$$

d) What's the probability that a coastline hiker is a female?

$$\frac{16}{34} = 0.470 = 47\%$$

3) If a meteorologist says there is a 35% chance of snow tomorrow, what is the probability that it will not snow?

$$1 - 0.35 = 0.65 = 65\%$$

4) If you roll a die once, what is the probability that you will get higher than a 2?

$$\frac{4}{6} = 0.667 = 66.7\%$$

5) A national survey was taken measuring the highest level of educational achievement among adults age 30 and over. The results are shown in the table below.

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

What is the probability that:

a) a randomly chosen person from the survey group is a man?

$$1570/3172 = 0.494 = 49.4\%$$

b) the highest level of education completed by a randomly chosen person from the survey group is a bachelor's degree?

$$1002/3172 = 0.315 = 31.5\%$$

c) a randomly chosen woman has earned a bachelor's or graduate degree?

$$\frac{539}{1602} + \frac{377}{1602} = \frac{916}{1602} = 0.571 = 57.1\%$$

d) a randomly chosen person whose highest level of education is high school is a man?

$$\frac{305}{537} = 0.567 = 56.7\%$$

6) Suppose a bag contains five green marbles, three blue marbles, six yellow marbles, and four white marbles. Maria shakes up the bag to mix the marbles and then draws one marble out of the bag. What is the probability that the marble Maria draws is:

18 total marbles

a) blue $3/18 = 0.166 = 16.6\%$

b) white $4/18 = 0.222 = 22.2\%$

c) green or yellow

$$5/18 + 6/18 = 11/18 = 0.611 = 61.1\%$$

d) neither blue nor yellow

$$1 - (3/18 + 6/18) = 1 - 9/18 = 1/2 = 50\%$$

P(green or white)