Name _____ Date_____

A bag contains green marbles and purple marbles. If a marble is randomly selected from the bag, the probability that it is green is 0.6 and the probability that it is purple is 0.4. Dylan draws a marble from the bag, notes its color, and returns it to the bag. He does this 50 times.

1. How many times would you expect Dylan to draw a green marble? Explain.

2. Is it possible for Dylan to draw a green marble exactly five times? Explain your reasoning.

Name _____ Date_____

For the past three months, Sydney recorded the number of eggs that her hen laid each week. The results are as follows: 4, 3, 5, 4, 6, 4, 5, 4, 3, 5, 7, and 6.

1. Approximate the probability that the hen will lay exactly five eggs next week and explain how you determined your answer.

2. Approximate the probability that the hen will lay four or fewer eggs the next week and explain how you determined your answer.

Name _____ Date_____

Olivia rolled two number cubes with sides numbered one through six. The sum of the two numbers she rolled was eight, and the probability of getting a sum of eight is $\frac{5}{36}$. The probability of getting other possible sums when two number cubes are rolled is given in the table.

Sum	Probability
2	$\frac{1}{36}$
3	$\frac{1}{18}$
4	$\frac{1}{12}$
5	$\frac{1}{9}$
6	$\frac{5}{36}$
7	$\frac{1}{6}$
8	$\frac{5}{36}$
9	$\frac{1}{9}$
10	$\frac{1}{12}$
11	$\frac{1}{18}$
12	$\frac{1}{36}$

1. Estimate the number of times that the sum will be 10 if the two number cubes are rolled 600 times. Show work and explain.

2. If Olivia rolls the number cubes 600 times, do you think she will get exactly the number you calculated? Why or why not?