Lab Assignment 4.1, 4.2

Name:_____Date:_____Row:_____

Lab Assignment 4.1, 4.2

1. Use the following information to answer the next five exercises: A company wants to evaluate its attrition rate, in other words, how long new hires stay with the company. Over the years, they have established the following probability distribution.

Let X= the number of years a new hire will stay with the company.

Let P(x) = the probability that a new hire will stay with the company x years.

1. Complete table using the data provided.

X	P(x)
0	0.12
1	0.18
2	0.30
3	0.15
4	
5	0.10
6	0.05

2. P(x= 4) =

3. P(x≥ 5) =

4. On average, how long would you expect a new hire to stay with the company?

5. What does the column “P(x)” sum to?

2. A baker is deciding how many batches of muffins to make to sell in his bakery. He wants to make enough to sell everyone and no fewer. Through observation, the baker has established a probability distribution.

X	P(x)
1	0.15
2	0.35
3	0.40
4	0.10

1

1. Define the random variable X.

2. What is the probability the baker will sell more than one batch? P(x > 1) =

3. What is the probability the baker will sell exactly one batch? P(x = 1) =

4. On average, how many batches should the baker make?

5. What is the standard deviation?

3. Use the following information to answer the next three exercises: Ellen has music practice three days a week. She practices for all of the three days 85% of the time, two days 8% of the time, one day 4% of the time, and no days 3% of the time. One week is selected at random.

1. Define the random variable X.
2. Construct a probability distribution table for the data.
3. On average, how many days a week does Ellen practice music?

4. Use the following information to answer the next five exercises: Javier volunteers in community events each month. He does not do more than five events in a month. He attends exactly five events 35% of the time, four events 25% of the time, three events 20% of the time, two events 10% of the time, one event 5% of the time, and no events 5% of the time.

2

1. Define the random variable X.
2. What values does x take on?
3. Construct a PDF table.
4. Find the probability that Javier volunteers for less than three events each month. P(x< 3) =
5. Find the probability that Javier volunteers for at least one event each month. P(x> 0) =

5. You are playing a game by drawing a card from a standard deck and replacing it. If the card is a face card, you win $30. If it is not a face card, you pay $2. There are 12 face cards in a deck of 52 cards.

1. What is the expected value of playing the game?
2. Should you play the game?
