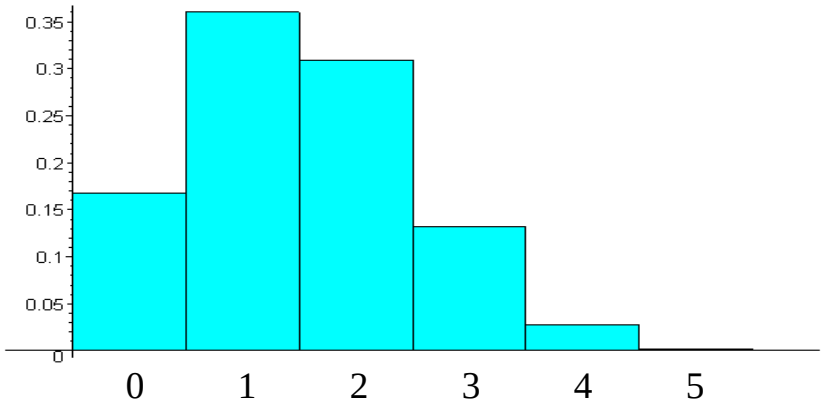
1. ***(Binomial)*** Records indicate that the probability that a person buying music, etc. from iTunes will spend more than $30 at one time is .30. If 5 people are randomly selected, the resulting probability distribution table and histogram are given below.

x	*P(x)*
0	0.168
1	0.360
2	0.309
3	0.132
4	0.028
5	0.002



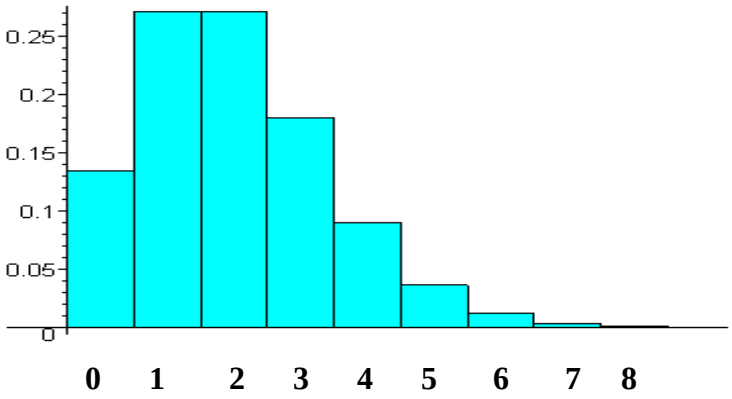
a. What $P(x = 2)$? What is the area of the rectangle associated with $x = 2$?

b. What is the area of each of the six rectangles in the histogram?

c. What is the sum of all of the areas of these rectangles?

d. How are these areas related to the probability?

2. ***(Poisson)*** After a rough winter and many new potholes, it is found that an average of 2 cars per day will get a flat tire driving on a particularly bad stretch of North Ave. The following is the resulting probability distribution table and histogram.



x	*P(x)*
0	0.135
1	0.271
2	0.271
3	0.180
4	0.090
5	0.036
6	0.012
7	0.003
8	0.001
9	0+

a. What $P(x = 3)$? What is the area of the rectangle associated with $x = 3$?

b. What is the area of each of the 9 rectangles in the histogram?

c. What is the sum of all of the areas of these rectangles?

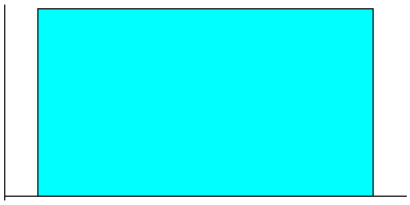
d. How are these areas related to the probability?

3. ***(Discrete Uniform)*** If you roll a six-sided die, what is the probability of rolling each number? Sketch the probability histogram.

   a. What is the area of each of the 6 rectangles in the histogram?

   b. What is the sum of all of the areas of these rectangles?

4. **(Continuous Uniform)** A route supervisor assigns delivery routes to his employees so that they are uniformly distributed between 45 and 72 miles. Let x = the number of miles on a route.

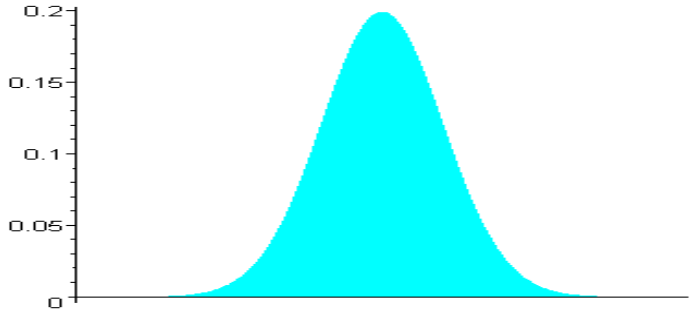


   a. Given the sketch above of the probability distribution, what do you think the area of the shaded region should be?

   b. Based on your answer to (a), find the height of the rectangle in the probability graph.

   c. Make an educated guess for the probability that Sally will get a route with at least 65 miles.

5. ***(Normal)*** Suppose the probability distribution for a continuous random variable is described by the graph below.



   What do you think the area of the shaded region should be?