Discrete v. Continuous Random Variables

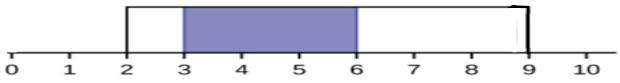
- Previously, we saw that _____ Random Variables…
  - Considers X as a _____ number of outcomes
  - The probability was a set rate or proportion (_____/_____)

- Moving on with _____ Random Variables…
  - Considers X as an _____ number of outcomes because it looks at the overall _____
  - The probability is the _____
    - With the total _____
  - Anytime an exact point is mentioned, the answer is automatically ____

Uniform Distribution

- Unlike what we see after this, uniform distribution has a _____ shaped curve.
- When we solve these questions, we use specific formulas:
  -
  -

1. Using the table below, answer the following questions.



   a. What is the probability (i.e. area) of the shaded region?

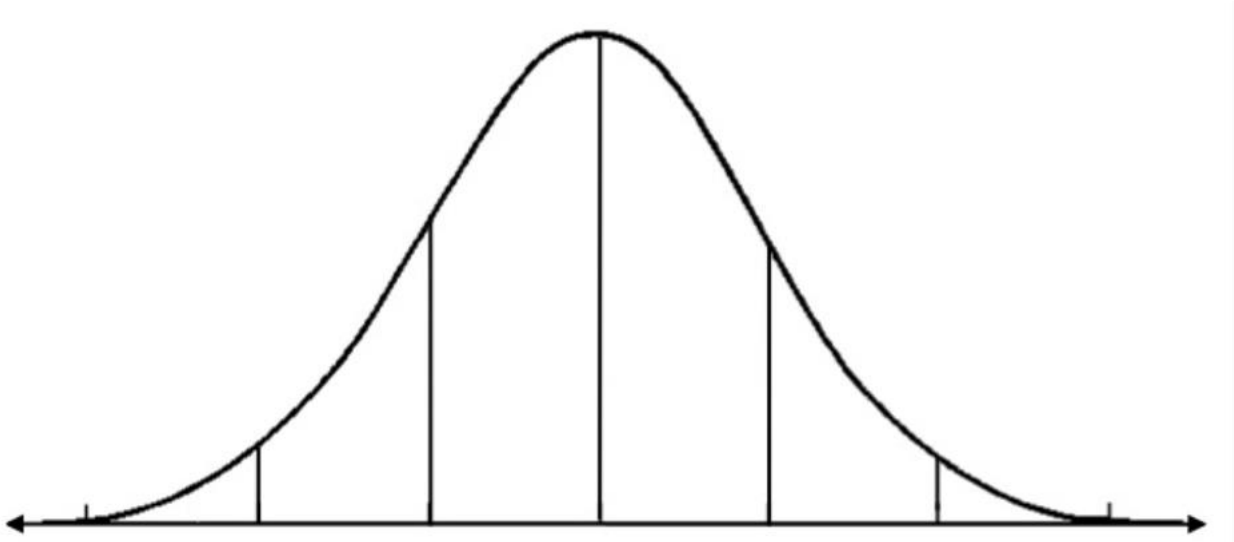
b. What would the probability of more than 2 but less than 7?

c. What is the probability of exactly 5?

d. What would be the probability of less than 4 or at least 8?

Empirical Rule

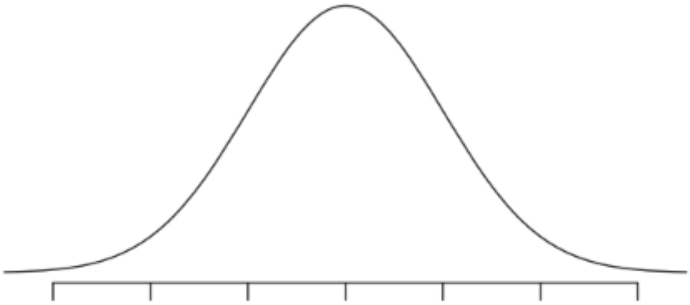
- Under empirical rule, the area under the curve is still ___
- The only thing to remember for empirical rule is what the graph below tells us!



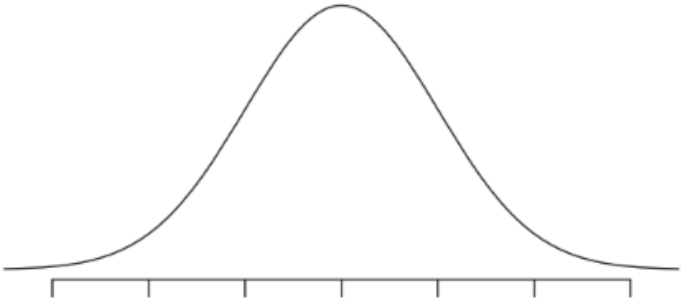
- In short, the graph above tells us…
  -
  -
  -

Using Empirical Rule, answer the following questions.

1. Sketch a graph in which the area (centered) is 68% while the mean is 86 and the standard deviation is 21. Write the Probability (P) statement for the shaded area.



2. Sketch a graph in which the area (from the left) is 16% while the mean is 14 and the standard deviation is 3. Write the Probability (P) statement for the shaded area.



3. Sketch a graph in which the area (from the right) is 97.5% while the mean is 190 and the standard deviation is 33. Write the Probability (P) statement for the shaded area.