KNEWTON | alta

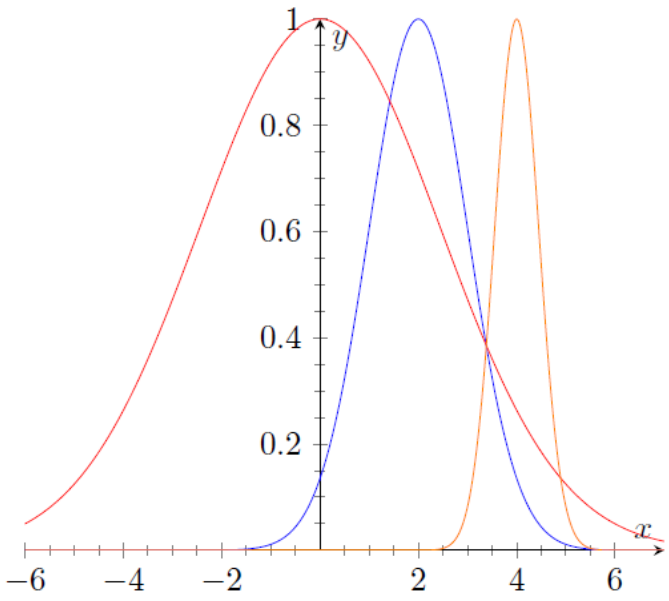
Normal Distribution

Learning Objectives

- Understand the notation and interpret the parameters of a normal distribution
- Compute z-scores and use them to compare values from different data sets
- Use a table to find probabilities in a normal distribution

Understand the notation and interpret the parameters of a normal distribution

1. Use the graph of the three distributions below (blue $f(x)$, red $g(x)$, orange $h(x)$) to answer the questions that follow.



a. Which of the distributions has the highest mean?

b. Which of the distributions has the highest standard deviation?

Compute z-scores and use them to compare values from different data sets

2. The SAT (combined scores) is normally distributed with a mean of 1500 and a standard deviation of 250. The ACT composite has a mean of 20.8 with a standard deviation of 4.8. Becka received 1820 combined score on the SAT and 28 on the ACT. Which of these tests produced the better score?

Use a table to find probabilities in a normal distribution

3. Use a table to find the probabilities associated with the following. Round your answer to one tenth of a percent.
    a. Being to the left of 1.3 in a standard normal distribution.

b. Being to the right of 0.7 in a standard normal distribution

c. Being in between -0.8 and 1.1 in a standard normal distribution.

ANSWER KEY

1. a. $h(x)$; b. $g(x)$
2. ACT score is higher
3. a. 90.3%, b. 24.2%, c. 65.2%