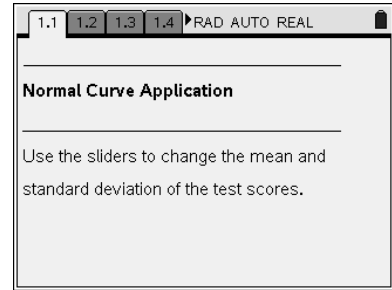



In this lesson, you will see how changes in the mean or standard deviation are reflected in the data of a real-world problem. You will compare two normal curves that represent two different groups of test scores.



- Open the TI-Nspire document *Normal_Curve_App*.
- Press  to move to page 1.2 and begin the activity.

On page 1.3 you will see a normal curve that represents a group of test scores. The mean is represented by the dashed vertical line. The other two points on the curve are the lowest and highest test scores that are contained within 99.7% of the scores.

- Move to page 1.3. Use the sliders to change the mean and standard deviation.

1. What happens to the range of test scores as the standard deviation is increased? As it is decreased?

2. If the mean of your class's scores is 80 and the standard deviation is 6, what is the lowest score you would most likely get?

3. As the standard deviation is changed, what do you notice about the mean? Why do you think this happens? *Hint: Use the test scores to explain your answer.*

4. To maintain a normal curve, how would the test scores have to change to increase the mean of the scores? To decrease the standard deviation?

➤ **Move to page 2.1.**

Two different classes took the same test. The mean and standard deviation of the test scores are as follows:

Class A: mean = 80, standard deviation = 3

Class B: mean = 76, standard deviation = 10

➤ **Move to page 2.2. Enter the mean and standard deviation of both classes in the spreadsheet.**

5. Compare the curves of classes A and B in relation to the problem.

6. Suppose the highest score possible for this test is 100. In which class are you more likely to get a better score? In which class is it possible to get the highest score?

7. In which class would you rather be? Explain.
