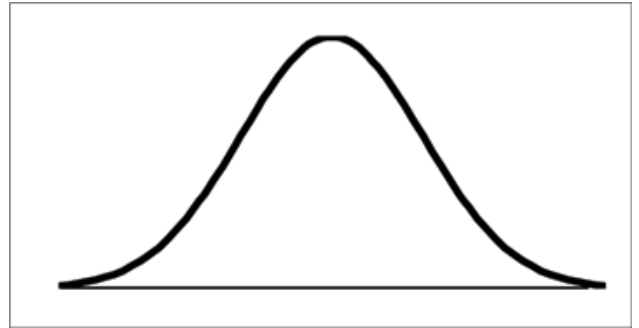


### Using the Standard Deviation:

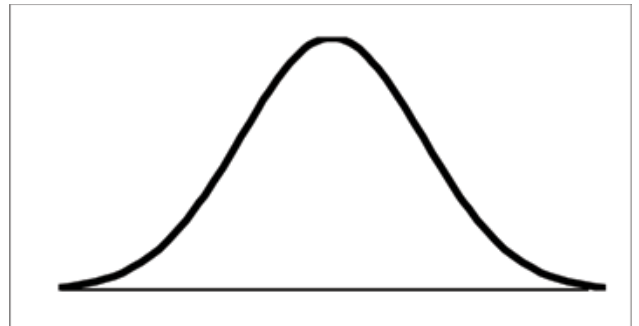
1:

A score of 85 is two standard deviations above the mean. If the standard deviation is 4, find the mean



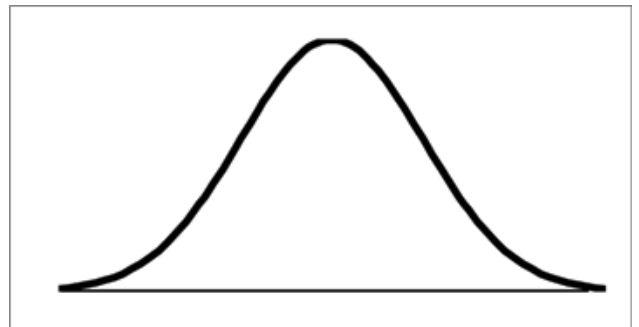
2:

In a normal distribution, approximately 68% of the scores fall between 72 and 86 and the mean is 79. What is the standard deviation?



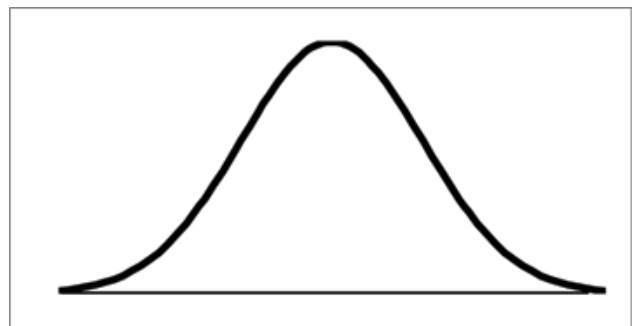
3:

The national mean for verbal scores on an exam was 430 and the standard deviation was 60. Approximately what percent of these taking the test had verbal scores between 370 and 490?



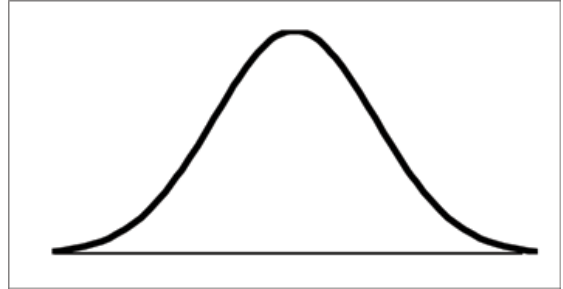
4:

The scores on a test approximate a normal distribution with a mean score of 72 and a standard deviation of 9. Approximately what percent of the students taking the test received a score lower than 90?

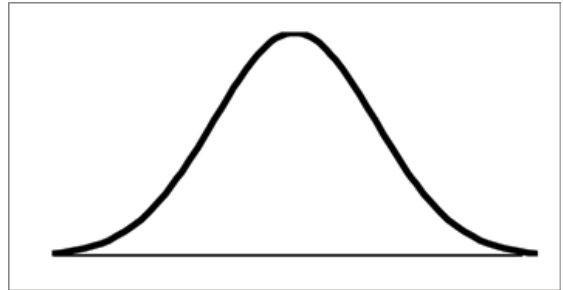


1. Battery lifetime is normally distributed for large samples. The mean lifetime is 500 days and the standard deviation is 61 days.

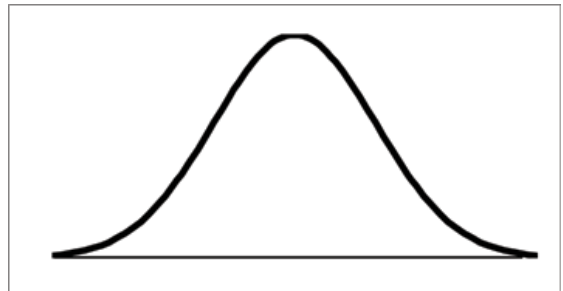
a) Approximately what percent of batteries have lifetime between 420 and 510?



b) Approximately what percent of batteries have lifetime **less than** 350?



c) Approximately what percent of batteries have lifetime **greater than** 560?



2. A test was given to a large group of students and the scores approximated a normal distribution. If the mean score was 72 with a standard deviation of 7

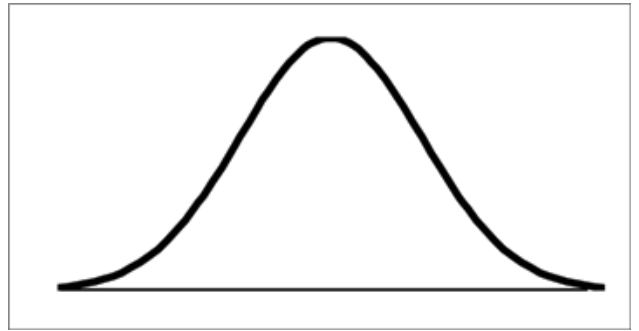
a) Approximately what percent of the scores were 71 to 73?

b) Which is more likely, a student gets a score above 75 or below 68? Explain with calculations to support your answer:

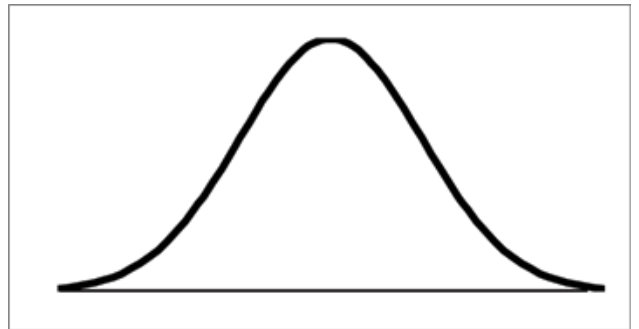
3. The heights of a sample of female students at a High School are normally distributed with a mean height of 65 inches and a standard deviation of 0.6 inch.

a) What percent of this sample is between 63.8 inches and 66.2 inches?

b) \*\*Above what height, in inches, would the top 2.3% of this sample population be found? (HINT: use the 68, 95, 99 rule)

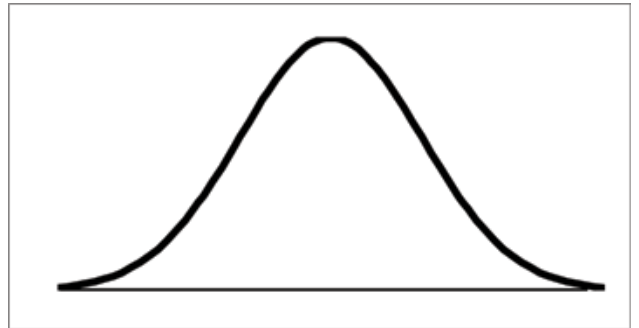


4. \*\*The heights of a group of girls are normally distributed with a mean of 66 inches. If 95% of the heights of these girls are between 63 and 69 inches, what is the standard deviation for this group?



**A little bit trickier:**

5. The mean of a score is 100 and the standard deviation is 6. How many standard deviations away from the mean is a score of 103 (assume it is normally distributed)?



6. In a clothes store, the mean size of shoes is an 8 and the standard deviation is 3.

Shaq is looking for a shoe that is greater than 17. Describe to him what the probability is that they will find one!

