Unit 6: Statistics Lesson 6.2
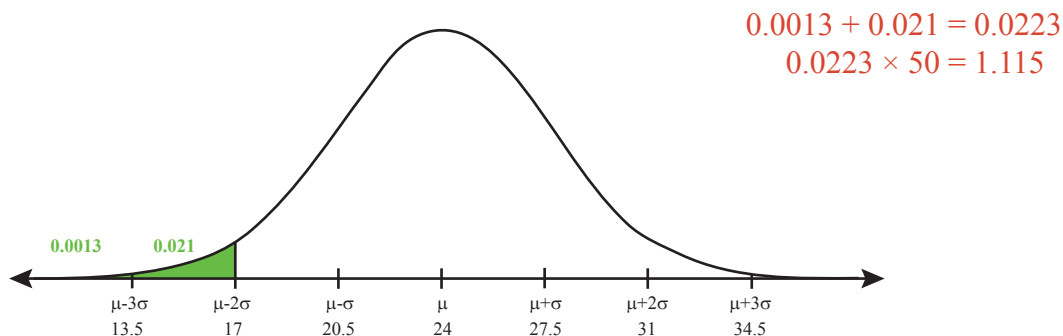
Coach's Corner – III

1. A large, normally distributed data set has a mean of 24 and a standard deviation of 3.5. If 50 data values are selected at random from the data set, predict how many will be

    a. over 24

    Half the data should be above the mean, so approximately 25 of the data values will be over 24.
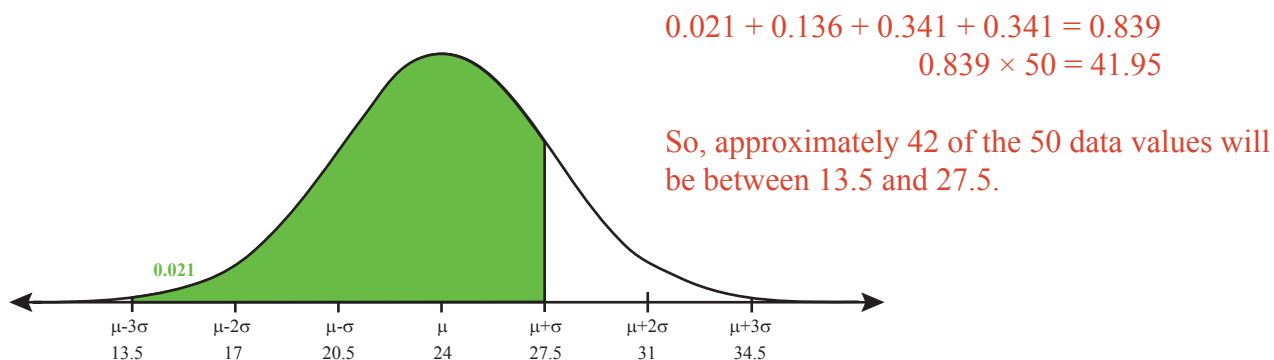
    b. under 17

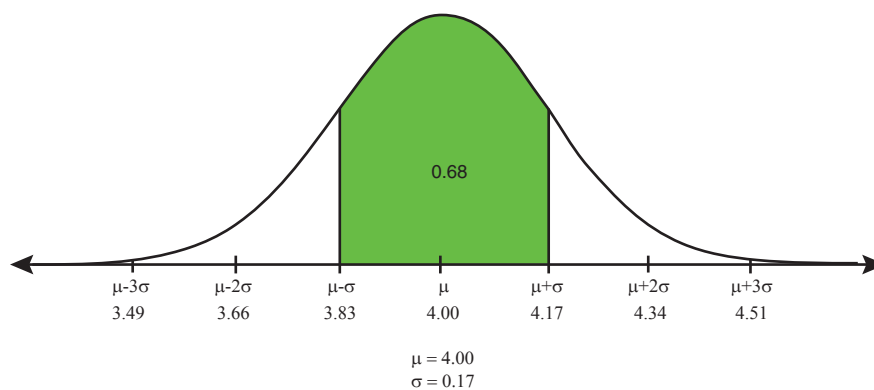   17 is two standard deviations below the mean.

$0.0013 + 0.021 = 0.0223$
$0.0223 \times 50 = 1.115$

c. between 13.5 and 27.5

13.5 is three standard deviations below the mean and 27.5 is one standard deviation above the mean.

$0.021 + 0.136 + 0.341 + 0.341 = 0.839$
$0.839 \times 50 = 41.95$

So, approximately 42 of the 50 data values will be between 13.5 and 27.5.

2. A set of data is normally distributed with a mean of 4.00 and a standard deviation of 0.17.

   a. Between which two data values will the middle 68% of the data lie?
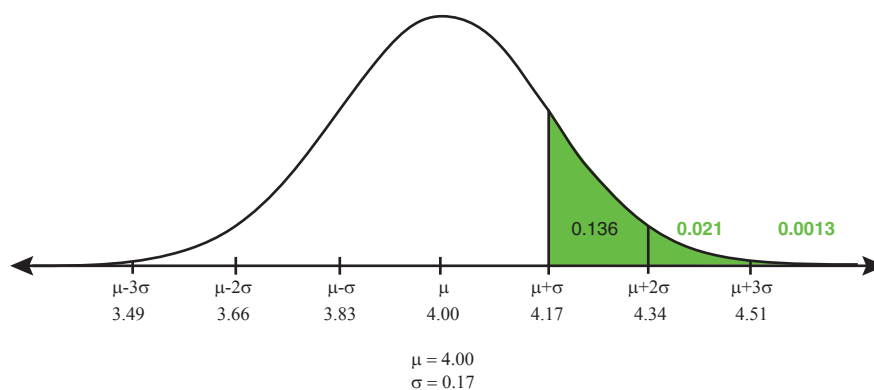
   Approximately 68% of data will lie within one standard deviation of the mean.
   $4.00 - 0.17 = 3.83$ and $4.00 + 0.17 = 4.17$, so 68% of the data will lie between 3.83 and 4.17.

   b. Above what value will 16% of the data lie?

   Approximately 16% of data lies above one standard deviation above the mean.

   One standard deviation above the mean is 4.17, so approximately 16% of the data will lie above 4.17.

Please complete *Lesson 6.2 Game On!* located in *Workbook 6A* before proceeding to *Lesson 6.3*.