

Next Day:

12. As shown in class, draw a normal curve with a mean of 65 and a standard deviation of 2.5. Start by drawing a horizontal line (this is the  $x$ -axis) and a bell-shaped normal curve above it. Mark the center of the curve (the big hump) with a vertical line and then label it as 65 on the horizontal axis. Then draw out and mark plus or minus one, two, and three standard deviations from the mean. Label these on the horizontal axis with the appropriate numbers.

13. Find the standard scores of the numbers you have labeled along the horizontal axis in #12. Now draw the standard normal curve with a mean of 0 at the center, and with the standard scores along the horizontal axis.

The point here is that the standard scores represent how many standard deviations an observation is above or below the mean. Notice how the observation 70 is two standard deviations above the mean of 65, and it corresponds to the 2 on the standard normal curve. Notice also, the observations that fall below the mean have negative standard scores.

14. Find the percentage of females who are **taller** than 70 inches.

15. Referring to the problem in #14: Draw a normal curve with the mean of 65 labeled on the horizontal axis (in the center near the hump). Also place 70 on the horizontal axis in an appropriate place (somewhere right of the mean of 65). Now shade the area under the curve that we are interested in. Does your answer to #14 make sense?

16. Find the percentage of females that are between 65 and 70 inches tall. Draw a normal curve with the mean of 65 labeled on the horizontal axis (in the center near the hump). Also place 70 on the horizontal axis in an appropriate place (somewhere right of the mean of 65). Now shade the area under the curve that we are interested in. Use the table to find the percentage of females between 65 and 70 inches tall.