Sketching normal distributions

Here's some steps you can following to sketch and label a normal distribution:

(A) Draw a horizontal axis.

(B) Draw a normal distribution curve. You might find it easiest to start at the peak, draw the right half swooping down to asymptote with the axis, and then draw the left half as a mirror image of the right half.

(C) Label the location of the peak with μ on the horizontal axis.

(D) Locate the inflection points on either side of the peak. Label the locations of these inflection points with $\mu - \sigma$ and $\mu + \sigma$ on the horizontal axis.

(E) Using the scale set by the points $\mu - \sigma$, μ, and $\mu + \sigma$, label the locations of $\mu - 2\sigma$ and $\mu + 2\sigma$

(F) Using the same scale, label the locations of $\mu - 3\sigma$ and $\mu + 3\sigma$

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1. Below is a graph of the normal distribution with mean $\mu = 10$ and standard deviation $\sigma = 3$.

   (a) Label the locations of 1, 4, 7, 10, 13, 16, and 19 on the horizontal axis. Start with labeling the location of 10. (Note that the other values are from going one standard deviation, two standard deviations, and three standard deviations to each side of the mean.)

   (b) Shade in the region under the graph between the values 4 and 13.

   (c) Estimate the area of the shaded region from (b).
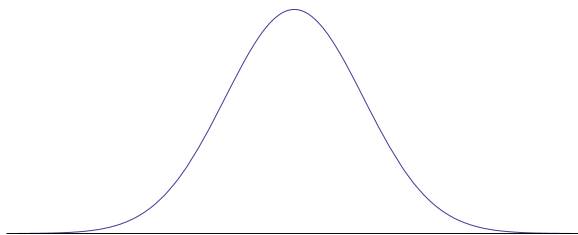
2. Consider the normal distribution with mean $\mu = 120$ and standard deviation $\sigma = 15$.

   (a) Sketch and label this normal distribution.

   (b) On your graph from (a), shade in the region between the values 120 and 150.

   (c) Estimate the area of the shaded region from (b).