A set of data is normally distributed with a mean of 12 and a standard deviation of 2.

1. Draw a sketch of this distribution. Then label the point on the horizontal axis that corresponds to the mean, one standard deviation above and below the mean, two standard deviations above and below the mean, and three standard deviations above and below the mean.

2. Answers the following questions about normal distributions. Draw sketches illustrating your answers.

a. What percentage of values lie 3 standard deviations above the mean.

b. What percentage of values lie between 1 standard deviations from the mean.

c. What is the percentile rank if the value is one standard deviation above the mean.