NORMAL DISTRIBUTION WORKSHEET #1
EMPIRICAL RULE

1) On the math portion of the SAT, the scores are roughly normally distributed with mean 500 and standard deviation 100.

   Since the mean is 500 and standard deviation is 100, we have:

   (a) What percentage of SAT scores are above 400?

   (b) What percentage of SAT scores are above 500?

   (c) What percentage of SAT scores are below 700?
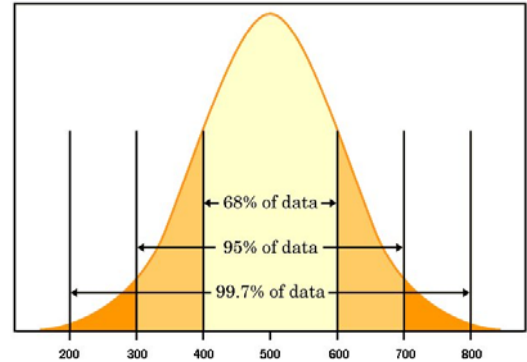
   (d) Between what two values do approximately 95% of SAT scores lie?

   (e) What is the score of a person who scores higher than 84% of people who take the SAT?

2) Given an approx. normal distribution with a mean of 175 and a standard deviation of 37,

   (a) Draw a normal curve and label 1, 2, and 3 standard deviations on both sides on the mean.

   (b) What percent of values are within the interval (138, 212)?

   (c) What percent of values are within the interval (101, 249)?

   (d) What percent of values are within the interval (64, 286)?

   (e) What percent of values outside the interval (138, 212)?

   (f) What percent of values are outside the interval (101, 249)?

   (g) What percent of values are outside the interval (64, 286)?

3) Given an approximately normal distribution with mean of 159 and a standard deviation of 17,

(a) Draw a normal curve and label 1, 2, and 3 standard deviations on both sides on the mean.

(b) What percent of values are within the interval (142, 176)?

(c) What percent of values are within the interval (125, 193)?

(d) What interval contains 99.7% of all values?

(e) What percent of values are above 176?

(f) What percent of values are below 125?

4) The incubation time for Rhode Island Red chicks is normally distributed with mean 21 days and standard deviation approximately 1 day. If 1000 eggs are being incubated, how many chicks do we expect will hatch?

(a)   In 19 to 23 days?   (e) In 22 days or more?

(b)   In 21 days or fewer?   (f) In 18 to 21 days?

(c)   In 19 days or fewer   (g) In 19 to 24 days?

(d)   In 18 to 24 days?   (h) In 18 days or more?