Assignment #11: Normal Distribution   Name: _____

Before we practice calculating probabilities and percentiles from the normal distribution, let's quickly review.

Write the probability statement described by each statement: Binomial   Exponential
                                                               Geometric   Hypergeometric
                                                               Negative Binomial Poisson

1. Finds the probability that the first time something happens is on the 3rd trial ………………… _____

2. Is used to calculate probabilities about waiting times ………………………………………….. _____

3. Finds the probability of obtaining 4 successes in 7 trials ……………………………………….. _____

4. Has an expected value equal to lambda …………………………………………………………….. _____

5. Finds the probability of choosing x objects of type X and y objects of type Y ………………….. _____

6. Calculates probabilities for the number of trials until something happens ………..…………… _____

7. The distribution of scores from a high school writing test are displayed
   to the right. Does the graph have a positive or negative skew?
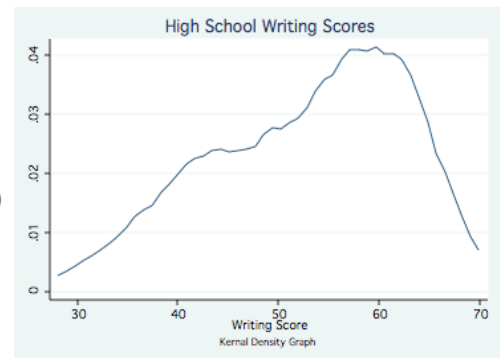
   Answer: _____ skew   (Source: UCLA High School & Beyond, 2000)

High School Writing Scores

8. Math scores on the test follow an approximate normal distribution with a mean of 52.6 and a standard deviation of
   9.37. Suppose one student earns a score of 70 on this test. Show the formula you would use to convert X = 70 into
   a Z-score for this distribution.

                                                                Answer: _____

Situation: According to the Opinion Research Corporation, the time men spend in the shower is normally distributed with a mean of 11.4 minutes and a standard deviation of 1.8 minutes. Let X = time spent in shower.

9. P(randomly chosen man spends less then 10 minutes in the shower) = _____

10. P(X ≥ 14) = _____

11. P(9 ≤ X ≤ 12) = _____

12. P(9 ≤ X ≤ 12) = _____

13. P(X > 30) = _____

14. P(X = 10) = _____

13. The 95th percentile for X = _____

13. 5% of men shower less than _____ minutes