Name:_____Date:_____

Normal Distribution Worksheet

Find the indicated area under the standard normal curve. Try using calculator method if you can, if not use the z-score table.

1. To the left of $z = 0.08$

2. To the left of $z = 1.28$

3. To the right of $z = -1.95$

4. To the right of $z = 3.25$

5. To the left of $z = -3.16$

6. To the right of $z = 2.51$

7. Between $z = 0$ and $z = 2.86$

8. Between $z = -0.51$ and $z = 0$

9. Between $z = -2.33$ and $z = 2.33$

10. To the left of $z = -1.96$ or to the right of $z = 1.96$

11. You work for a consumer watchdog publication and are testing the advertising claims of a light bulb manufacturer. The manufacturer claims that the life span of the bulb is normally distributed, with a mean of 2000 hours and standard deviation of 250 hours. You test 20 light bulbs and get the following life spans.

2210, 2406, 2267, 1930, 2005, 2502, 1106, 2140, 1949, 1921, 2217, 2121, 2004, 1397, 1659, 1577, 1728, 1209, 1639

a) Draw a frequency histogram to display these data. Use five classes. Is it reasonable to assume that the life span is normally distributed? Why?

Class	Frequency

b) Find the mean and standard deviation of your sample.

c) Compare the mean and standard deviation of your sample with those in the manufacturer's claim. Discuss the differences.

12. The ACT is an exam used by colleges and universities to evaluate undergraduate applicants. The test scores are normally distributed. In a recent year, the mean test score was 21.0 and the standard deviation was 4.8. The test scores of four students selected at random are 18, 32, 14, and 25.

a) Without converting to z-scores, match each value with the letters A, B, C, and D on the given graph of the Standard Normal Distribution.

A   B   C   D