**Lab 1 for Section 13.6** Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Use good notation and show appropriate work. State your solutions to problems in complete sentences.*

1. Consider a data set with mean of 25 and standard deviation of 3. Use the 68-95-99.7 rule to find each of the following probabilities.

(a) *P*(*x* > 25) (b) *P*(*x* < 19)

(c) *P*(22 < *x* < 28) (d) *P*(25 < *x* < 28)

(e) *P*(*x* > 19) (f) *P*(*x* > 34)

2. Use Table 13.7 to find the percentage of the data that lie in the following regions for a standard normal distribution.

(a) between *z* = 0 and *z* = 1.84 (b) between *z* = 1.34 and *z* = 1.62

(c) between *z* = –1.41 and *z* = 1.67 (d) for *z* ≤ 1.4

(e) *z* ≥ 1.52 (f) for *z* ≤ –0.73

(g) *z* ≥ –2.31 (h) between *z* = –1.1 and *z* = 0.81

3. Assume a set of data has a normal distribution with a mean of 74 and a standard deviation of 6.

Determine the -score if the raw score is

(a) 89 (b) 65

4. Assume the weights of individual apples in a large collection of apples have a normal distribution with a mean of 9 ounces and a standard deviation of 2 ounces. What percentage of the apples weigh

(a) between 9 and 11 ounces? (b) more than 10 ounces?

(c) more than 7.6 ounces? (d) between 7 and 8.6 ounces?

5. Assume that among the members at a men’s gym, the distribution of body weights has a mean of 172 pounds and a standard deviation of 20 pounds. If 250 men are members of this gym, how many of them would you expect to weigh more than 200 pounds?