Prob/StatDiscrete   **Name**_____
Worksheet 6.3

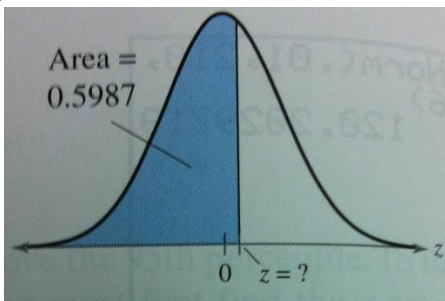*In Exercises 1-6, use the Standard Normal Table to find the z-score that corresponds to the given cumulative area or percentile. If the area is not in the table, use the entry closest to the area. If the area is halfway between two entries, use the z-score halfway between the corresponding z-scores. If convenient, use technology to find the z-score.*
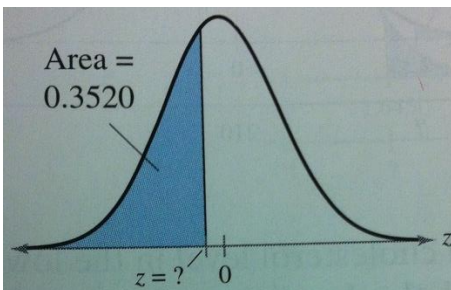
1. 0.6331
2. 0.0080
3. 0.05
4. 0.01
5. P_{20}
6. P_{67}

Graphical Analysis *In Exercises 7-11, find the indicated z-score(s) shown in the graph. If convenient, use technology to find the z-score(s).*

7.
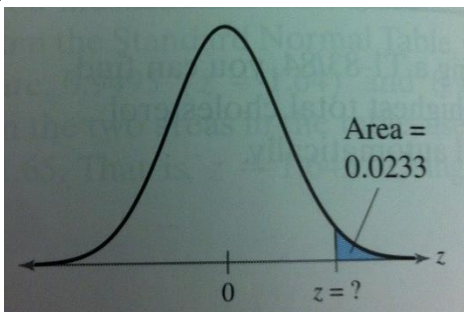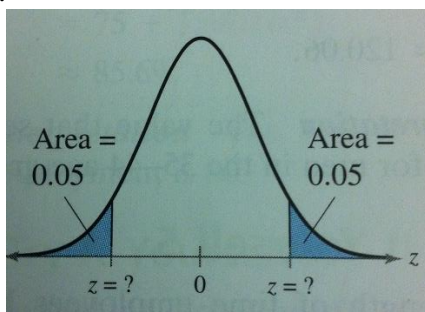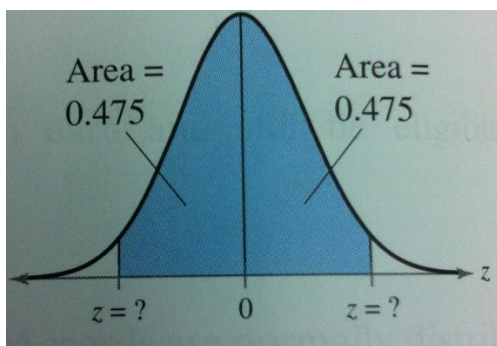

Area = 0.5987

0   z = ?

8.

Area = 0.3520

z = ?   0

9.

Area = 0.0233

0   z = ?

10.

Area = 0.05   Area = 0.05

z = ?   0   z = ?

11.

Area = 0.475   Area = 0.475

$z = ?$ 0 $z = ?$ z

In Exercise 12, find the indicated z-score

12. Find the z-score that has 11.9% of the distribution's area to its left.

Using Normal Distributions *In Exercises 13-16, answer the questions about the specified normal distributions.*

13. **Heights of Women** In a survey of women in the United States (ages 20-29), the mean height was 64.1 inches with a standard deviation of 2.71 inches.
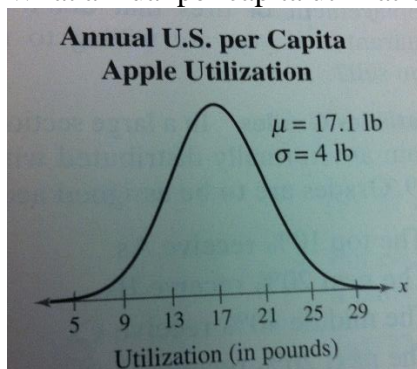   a) What height represents the 95th percentile?
   b) What height represents the first quartile?

14. **Heights of Men** In a survey of men in the United States (ages 20-29), the mean height was 69.6 inches with a standard deviation of 3.0 inches.
   a) What height represents the 90th percentile?
   b) What height represents the first quartile?

15. **Apples** The annual per capita utilization of apples (in pounds) in the United States can be approximated by a normal distribution, as shown in the graph.
   a) What annual per capita utilization of apples represents the 10th percentile?
   b) What annual per capita utilization of apples represents the third quartile?

Annual U.S. per Capita Apple Utilization

$\mu = 17.1$ lb
$\sigma = 4$ lb

5   9   13   17   21   25   29

Utilization (in pounds)

16. **Oranges** The annual per capita utilization of oranges (in pounds) in the United States can be approximated by a normal distribution, as shown in the graph.
   a) What annual per capita utilization of oranges represents the 5th percentile?
   b) What annual per capita utilization of oranges represents the third quartile?

Annual U.S. per Capita Orange Utilization

$\mu = 11.4$ lb
$\sigma = 3$ lb

2   5   8   11   14   17   20

Utilization (in pounds)