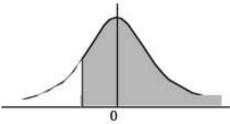# WORKSHEET 6

1. **A normal distribution curve ………**
    A) is continuous
    B) is positively skewed
    C) is negatively skewed
    D) has gaps or holes

2. **A property of the normal distribution is ………**
    A) mean $\neq 0$
    B) mean = 0
    C) mean = standard deviation
    D) mean = median = mode

3. **A standard normal distribution curve is ………**
    A) U-shaped
    B) J-shaped
    C) bell-shaped
    D) uniform

4. **A normal distribution curve is symmetric about ………**
    A) 1
    B) μ
    C) σ
    D) 0

5. **The standard normal distribution is a normal distribution with ………**
    A) mean = 1, standard deviation = 0
    B) mean = 0, standard deviation = 1
    C) mean = -1, standard deviation = 1
    D) mean = 1, standard deviation = 1

6. **The average number of calories in a chocolate bar is 225. Suppose that the variable is approximately normally distributed with a standard deviation 10. Find the probability that a randomly selected chocolate bar will have less than 200 calories.**
    A) 0.0062
    B) 0.9938
    C) 0.4938
    D) 0.0202

7. **Find two z-values so that 90.5% of the middle area is bounded by them.**
   A) ± 0.12
   B) ± 0.24
   C) ± 1.67
   D) ± 1.31

8. **Find P(- 0.55 < z < 0.55).**
   A) 0.4176
   B) 0.7088
   C) 0.2912
   D) 0.8643

9. **Find the z-value if the area shaded below is equal to 0.9875.**

   A) − 0.03
   B) 2.24
   C) 0.03
   D) − 2.24

10. **The standard deviation of the sample means is ………**
    A) equal to the population standard deviation.
    B) equal to the population standard deviation divided by the square root of the sample size.
    C) equal to the square root of the population standard deviation.
    D) greater than the population standard deviation.

11. **In a normal distribution, find σ when μ = 110 and 2.87% of the area lies to right of 112.**
    A) − 1.05
    B) 0.7
    C) 1.05
    D) − 0.7

12. **To qualify for a university, candidates must score in the top 20% on a general abilities test. The test has a mean of 150 and a standard deviation of 25. Find the lowest possible score to qualify. Assume the test scores are normally distributed.**
    A) 169.7
    B) 164.5
    C) 171
    D) 129

13. The average time it takes a group of adults to complete a test is 46.2 minutes and the standard deviation is 8 minutes. Assume the variable is normally distributed. If 50 adults are selected at random, find the probability that the mean time it takes the group to complete the test will be less than 47 minutes.
    A) 0.7611
    B) 0.2389
    C) 0.5398
    D) 0.5040

14. If a sample has a size of 9 and a standard deviation of 2.3, the standard error of the mean is ………
    A) 2.300
    B) 1.517
    C) 0.767
    D) 0.256

15. The average time it takes students to get to school is 15.1 minutes. Assume the time has a normal distribution with a variance of 8.1 minutes. If a student is randomly selected, find the probability that he gets to school in greater than 17 minutes.

    A) 0.5910
    B) 0.2514
    C) 0.7486
    D) 0.4090

Answer Key:

1. A
2. D
3. C
4. B
5. B
6. A
7. C
8. A
9. D
10. B
11. C
12. C
13. A
14. C
15. B