**Study Questions 5-3**

CONFIDENCE INTERVALS

1. If we are constructing a 98 percent confidence interval for the population mean, the confidence level will be

1. 2 percent
2. 2.29
3. 98 percent
4. 2.39

2. The z value corresponding to a 97 percent confidence interval is

1. 1.88
2. 2.17
3. 1.96
4. 3 percent

3. If we change the confidence level from 99 percent to 95 percent when constructing a confidence interval for the population mean, we can expect the size of the interval to

1. increase
2. decrease
3. stay the same
4. none of the above

4. If the 98 percent confidence limits for the population mean are 73 and 80, which of the following could be the 95 percent confidence limits?

1. 73and81
2. 72and79
3. 72and81
4. 74and79

5. A 90 percent confidence interval for a population mean indicates that

1. a. we are 90 percent confident that the interval will contain all possible sample means with the same sample size taken from the given population
2. b. we are 90 percent confident that the population mean will be the same as the sample mean used in constructing the interval
3. c. we are 90 percent confident that the population mean will fall within the interval

d. none of the above is true

6. Which of the following confidence intervals will be the widest?

1. 90 percent
2. 95 percent
3. 80 percent
4. 98 percent

7. In constructing a confidence interval for the population mean, if the level of confidence is changed from 99 percent to 90 percent, the standard deviation of the mean will

1. be equal to 90% of the original standard deviation of the mean
2. increase
3. decrease
4. remain the same

8. A 99 percent confidence interval is to be constructed for a population mean from a random sample of size 22. If the population standard deviation is known, the table value to be used in the computation is

1. 2.518
2. 2.330
3. 2.831
4. 2.580

9. The height (in inches) of the students on a campus are assumed to have a normal distribution with a standard deviation of 4 in. A random sample of 49 students was taken and yields a mean of 68 in. The 95 percent confidence interval for the population mean is

1. 67.06 to 68.94 in
2. 66.88 to 69.12 in
3. 63.42 to 72.48 in
4. 64.24 to 71.76 in

10. The area under any normal curve that is within two standard deviations of the mean is approximately

1. 0.950
2. 0.680
3. 0.997
4. 0.500