61. Which of the following is not true of the normal distribution?

- the curve approaches the x-axis gradually on either side of the mean
- the measures of central tendency (mean, mode, and median) are equal in value
- the curve is bell-shaped
- the distribution is symmetrical about the vertical line drawn from the peak of the curve
- the curve is asymmetrical

62. If $\mu=5000$ and $\sigma=50$, the z-value of $x=5025$ is

- -1.0
- 1.0
- 0.5
- -0.5
- none of the above

63. A shop foreman found that it takes 40 minutes on average to complete a specific task. Given that the standard deviation for this task is 5 minutes and the times for completing this task are normally distributed, what is the probability that on any given day it will take 50 minutes or more to complete the task?

- 0.7228
- 0.4772
- 0.0228
- 0.5000
- none of the above

64. A manufacturer of light bulbs guarantees that his bulbs will last an average of 10 000 hours. Tests have shown that the bulbs last an average of 12 000 hours with a standard deviation of 500 hours. Assuming a normal distribution, what is the likelihood that the bulbs will not last more than 10 000 hours?

- 0.0
- 100
- 0.009
- 0.399
- none of the above

65. What does it mean to standardize a score?

- A. Make it so the mean of the scores is 10 and the standard deviation is 2.
- B. Make it so the mean of the distribution is 100 and the standard deviation is 10.
- C. Make it so a given measure can be interpreted in a variety of contexts and circumstances.
- D. Make it so the z-table can be used for percentiles.

66. Standardization allows a researcher to
    - A. locate where a score falls in a distribution and describe how it compares to other scores in the distribution.
    - B. identify whether data entry errors have been made.
    - C. "normalize" their data.
    - D. compare their data to SAT scores.

67. A z-score tells you
    - A. how far above or below the mean a score lies.
    - B. the original raw score on which it is based.
    - C. if the distribution it comes from is normal.
    - D. how far above or below the mean a score lies in standard deviation units.

68. Tina's score on her midterm exam was at the 50th percentile. The grades were normally distributed. The exam average was 78 and the standard deviation was 6. What was Tina's score on the exam?
    - A. 90
    - B. 50
    - C. 84
    - D. 78

69. Jane recently had a baby. She named him Tyler. Jane was told that the weights of babies born in this hospital are normally distributed and the mean is 7 lbs. 8 oz., with a standard deviation of 4 oz. Tyler's weight at birth was in the 15th percentile. How much did Tyler weigh when he was born?
    - A. 7 lbs., 4 oz.
    - B. 7 lbs., 8 oz.
    - C. 7 lbs., 10 oz.
    - D. 7 lbs., 12 oz.

70. Susie and Joan complain that they make very little money at their jobs; they are both radio announcers. The population of 27,000 radio announcers averages $27,500 per year with a standard deviation of $5,300. Susie makes $25,000 per year and Joan makes $32,500. What is the z-score for Joan's salary?

- A. .94
- B. -.47
- C. .47
- D. -.94

71. I scored in the 98th percentile on an achievement test last year. The test scores were normally distributed with an average of 1200 and a standard deviation of 150. What was my score?
    - A. 950
    - B. 1350.25
    - C. 1507.5
    - D. 892.5

72. What does it mean when you calculate a 95% confidence interval?
    a. The process you used will capture the true parameter 95% of the time in the long run
    b. You can be "95% confident" that your interval will include the population parameter
    c. You can be "5% confident" that your interval will not include the population parameter
    d. All of the above statements are true

73. What would happen (other things equal) to a confidence interval if you calculated a 99 percent confidence interval rather than a 95 percent confidence interval?
    a. It will be narrower
    b. It will not change
    c. The sample size will increase
    d. It will become wider

74. A _____ is a subset of a _____.
    a. Sample, population
    b. Population, sample
    c. Statistic, parameter
    d. Parameter, statistic

75. Which ____ percent confidence interval will be the widest (i.e., the least precise) for a particular data set that includes exactly 500 cases?
    a. 99%
    b. 95%
    c. 90%
    d. None of the above

76. As sample size goes up, what tends to happen to 95% confidence intervals?
    a. They become more precise

b. They become more narrow
c. They become wider
d. Both a and b

77. A sample of 50 students was taken from the local university. These students spent an average of $170 on books this semester, with a standard deviation of $25.50. Which of the following could you say with 95% confidence was the average spent on books by these 50 students?

- $170 plus or minus $3.46
- $170 plus or minus $5.95
- $170 plus or minus $8.42
- None of these is correct.

78. A random sample of 72 statistics students was taken to estimate the proportion of students who also were in the Math Club. The 90% confidence interval was 0.438 to 0.642. Using this information, what size sample would be necessary to estimate the true proportion to within 0.08 using 95% confidence?

105
150
420
597