Practice(chapter6)

Name_____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Solve the problem.

1) The daily revenue at a university snack bar has been recorded for the past five years. Records indicate that the mean daily revenue is $3500 and the standard deviation is $550. The distribution is skewed to the right due to several high volume days (football game days). Suppose that 100 days are randomly selected and the average daily revenue computed. Which of the following describes the sampling distribution of the sample mean? 1) _____

A) normally distributed with a mean of $3500 and a standard deviation of $550
B) normally distributed with a mean of $3500 and a standard deviation of $55
C) normally distributed with a mean of $350 and a standard deviation of $55
D) skewed to the right with a mean of $3500 and a standard deviation of $550

2) The number of cars running a red light in a day, at a given intersection, possesses a distribution with a mean of 2.7 cars and a standard deviation of 4. The number of cars running the red light was observed on 100 randomly chosen days and the mean number of cars calculated. Describe the sampling distribution of the sample mean. 2) _____

A) approximately normal with mean = 2.7 and standard deviation = 0.4
B) shape unknown with mean = 2.7 and standard deviation = 4
C) shape unknown with mean = 2.7 and standard deviation = 0.4
D) approximately normal with mean = 2.7 and standard deviation = 4

Identify the distribution of the sample mean. In particular, state whether the distribution of $\bar{x}$ is normal or approximately normal and give its mean and standard deviation.

3) The weights of people in a certain population are normally distributed with a mean of 152 lb and a standard deviation of 22 lb. Determine the sampling distribution of the mean for samples of size 2. 3) _____

A) Approximately normal, mean = 152 lb, standard deviation = 15.56 lb
B) Normal, mean = 152 lb, standard deviation = 22 lb
C) Normal, mean = 152 lb, standard deviation = 15.56 lb
D) Approximately normal, mean = 152 lb, standard deviation = 11 lb

4) The heights of people in a certain population are normally distributed with a mean of 65 inches and a standard deviation of 3.9 inches. Determine the sampling distribution of the mean for samples of size 44. 4) _____

A) Approximately normal, mean = 65 inches, standard deviation = 0.09 inches
B) Normal, mean = 65 inches, standard deviation = 0.09 inches
C) Normal, mean = 65 inches, standard deviation = 0.59 inches
D) Normal, mean = 65 inches, standard deviation = 3.9 inches

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Solve the problem.

5) Suppose a random sample of $n = 36$ measurements is selected from a population with mean $\mu = 256$ and variance $\sigma^2 = 144$. Find the mean and standard deviation of the sampling distribution of the sample mean $\bar{x}$. 5) _____

6) Suppose a random sample of $n = 64$ measurements is selected from a population with mean $\mu = 65$ and standard deviation $\sigma = 12$. Find the z–score corresponding to a value of $\bar{x} = 68$. 6) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

7) The average score of all golfers for a particular course has a mean of 69 and a standard deviation of 5. Suppose 100 golfers played the course today. Find the probability that the average score of the 100 golfers exceeded 70. 7) _____

A) .1293 B) .4772 C) .3707 D) .0228

8) The weight of corn chips dispensed into a 17–ounce bag by the dispensing machine has been identified as possessing a normal distribution with a mean of 17.5 ounces and a standard deviation of 0.1 ounce. Suppose 100 bags of chips are randomly selected. Find the probability that the mean weight of these 100 bags exceeds 17.6 ounces. 8) _____

A) .3085 B) .6915
C) .1915 D) approximately 0

Find the indicated probability or percentage for the sampling error.

9) Scores on a biology final exam are normally distributed with a mean of 220 and a standard deviation of 24. Determine the percentage of samples of size 9 that will have mean scores within 12 points of the population mean score of 220. 9) _____

A) 93.32% B) 13.36% C) 86.64% D) 38.30%

10) The amount of coffee that a filling machine puts into an 8–ounce jar is normally distributed with a mean of 8.2 ounces and a standard deviation of 0.18 ounce. Determine the percentage of samples of size 16 that will have mean amounts of coffee within 0.1 ounce of the population mean of 8.2 ounces. 10) _____

A) 98.68% B) 97.36% C) 71.23% D) 42.46%

Answer Key
Testname: PRACTICE-CH6

1) B
2) A
3) C
4) C
5) $\mu_{\bar{x}} = \mu = 256$; $\sigma_{\bar{x}} = \frac{\sqrt{144}}{\sqrt{36}} = \frac{12}{6} = 2$
6) $z = \frac{68 - 65}{1.5} = 2$
7) D
8) D
9) C
10) B