Sample Quiz 4

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

Question 1-3: The weights of candies are normally distributed with mean 0.5 ounces and a standard deviation of 0.25 ounces. A random sample of 16 candies is taken.

1) What is the probability that the sample mean will be between 0.40 and 0.55 ounces?

   A) 0.8000   B) 0.7333   C) 0.5762   D) 0.6238

2) What is the probability that the sample mean will be above 0.6 ounces?

   A) 0.1000   B) 0.6000   C) 0.9452   D) 0.0548

3) Below what value do 28.1% of the sample means fall?

   A) 0.464   B) 0.546   C) 0.536   D) 0.420

4) A meat inspector has randomly measured 30 packs of acclainmed .95 lean beef. The sample resulted in $\overline{X} = 0.87$ and $s^2 = 0.64$. Construct a 99% confidence interval for the mean value?

   A) 0.87 ± 0.377 B) 0.87 ± 0.074 C) 0.87 ± 0.322 D) 0.87 ± 0.403

5) Suppose that the weights of toy fox terrier dogs are normally distributed with a standard deviation of 2.5 kilograms. A sample of 50 toy fox terrier dogs is randomly selected with a mean of 12.5 kilograms. The 95% confidence interval for the mean weight will be between _____ and _____.

   A) 11.81 and 13.19 kilogram   B) 12.50 and 13.50 kilogram

   C) 11.92 and 13.08 kilogram   D) 11.59 and 13.41 kilogram

6) Suppose that the weights of toy fox terrier dogs are normally distributed with a standard deviation of 2.5 kilograms. A sample of 50 toy fox terrier dogs is randomly selected with a mean of 12.5 kilograms. If the 99% confidence interval for the mean weight is 12.5 ± 0.91. Find the lower and upper limits and interpret this interval.

   A) We are 99% confidence that the true proportion is between 11.59 and 13.41 kilogram

   B) We are 99% confidence that the sample mean is between 11.59 and 13.41 kilogram

   C) We are 99% confidence that the true mean is between 11.59 and 13.41 kilogram

   D) 99% of the sample mean is between 11.59 and 13.41 kilogram

7) The proportion of a brand of tires that will become flat within 1000 miles is to be estimated. One hundred randomly selected tires are examined and 5 of them become flat within the first 1000 miles. Use a 95% confidence interval to estimate the true proportion of tires become flat within the first 1000 miles.

   A) 0.50 ± 0.043 B) 0.05 ± 0.043 C) 0.00 ± 0.050 D) 0.10 ± 0.050

8) The proportion of a brand of tires that will become flat within 1000 miles is to be estimated. One hundred randomly selected tires are examined and 5 of them become flat within the first 1000 miles. The 90% confidence interval for the proportion is 0.05 ± 0.036. Find the lower and upper limits and interpret this interval.

   A) We are 90% confident that between 1.4% and 8.6% of the tires will become flat within the first 1000 miles.

   B) We are 90% confident that 5% of the tires will become flat within the first 1000 miles.

   C) We are 90% confident that the true proportion of tires become flat within the first 1000 miles. is between 1.4% and 8.6%.

   D) We are 90% confident that the sample average of tires become flat is between 1.4% and 8.6%.

9) True or False: A statistic is usually used to provide an estimate for a ususlly unobserved parameter.

   A) True   B) False

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

1) B
2) D
3) A
4) D
5) A
6) C
7) B
8) C
9) A