PRACTICE 6.2,6.3

WHO are YOU TEACHER

S ≠ σ

SHORT ANSWER/ PROBLEM SOLVING. Be sure to explain reasoning where necessary

Solve the problem.

1) Find the critical value, t_c for c = 0.99 and n = 10. 1) 3.25

2) Find the value of E, the margin of error, for c = 0.90, n = 10 and s = 3.7. 2) 2.14

3) A random sample of 40 college students has a mean earnings of $3120 with a standard deviation of $677 over the summer months. Determine whether a normal distribution or a t-distribution should be used or whether neither of these can be used to construct a confidence interval. 3) NORMAL

4) Construct a 95% confidence interval for the population mean, μ. Assume the population has a normal distribution. A sample of 25 randomly selected students has a mean test score of 81.5 with a standard deviation of 10.2. 4) (77.29, 85.71)

5) Construct a 98% confidence interval for the population mean, μ. Assume the population has a normal distribution. A study of 14 bowlers showed that their average score was 192 with a standard deviation of 8. 5) (186.3, 197.7)

6) A random sample of 10 parking meters in a beach community showed the following incomes for a day. Assume the incomes are normally distributed.

$3.60 $4.50 $2.80 $6.30 $2.60 $5.20 $6.75 $4.25 $8.00 $3.00

Find the 95% confidence interval for the true mean. 6) (3.39, 6.01)

? (3.46, 5.94)

7) A coffee machine is supposed to dispense 12 ounces of coffee in each cup. An inspector selects a random sample of 40 cups of coffee and finds they have an average amount of 12.2 ounces with a standard deviation of 0.3 ounce. Use a 95% confidence interval to test whether the machine is dispensing acceptable amounts of coffee. 7) (12.1, 12.3)

not working right

8) When 325 college students were surveyed,115 said they own their car. Find a point estimate for p, the population proportion of students who own their cars.

8) .354

9) A survey of 2210 golfers showed that 399 of them are left-handed. Find a point estimate for p, the population proportion of golfers that are left-handed.

9) .181

10) A survey of 280 homeless persons showed that 63 were veterans. Construct a 90% confidence interval for the proportion of homeless persons who are veterans.

10) (.184, .266)

$\frac{63}{280} = \hat{p} = .225 \quad \hat{q} = .775 \quad E = .041$

11) A private opinion poll is conducted for a politician to determine what proportion of the population favors decriminalizing marijuana possession. How large a sample is needed in order to be 98% confident that the sample proportion will not differ from the true proportion by more than 5%?

11) 543

12) In a survey of 2480 golfers, 15% said they were left-handed. The survey's margin of error was 3%. Find the confidence interval for p.

12) 84.5%

$1.785\sqrt{\frac{(.15)(.85)}{2480}} = .013$

$.15 \pm .013$

more practice 6.2

Name_____

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

Solve the problem.

1) Find the critical value, t_c for c = 0.99 and n = 10. 1) A

A) 3.250 B) 2.262 C) 1.833 D) 2.2821

2) Find the critical value, t_c, for c = 0.90 and n = 15. 2) B

A) 2.145 B) 1.761 C) 2.624 D) 1.345

3) Find the value of E, the margin of error, for c = 0.90, n = 10 and s = 3.7. 3) D

A) 1.62 B) 2.12 C) 0.68 D) 2.14

4) In a random sample of 28 families, the average weekly food expense was \$95.60 with a standard deviation of \$22.50. Determine whether a normal distribution or a t-distribution should be used or whether neither of these can be used to construct a confidence interval. Assume the distribution of weekly food expenses is normally shaped. 4) A

A) Use a t-distribution.

B) Use a normal distribution.

C) Neither a normal distribution nor a t-distribution can be used.

5) A random sample of 40 college students has a mean earnings of \$3120 with a standard deviation of \$677 over the summer months. Determine whether a normal distribution or a t-distribution should be used or whether neither of these can be used to construct a confidence interval. 5) A

A) Use a normal distribution.

B) Use a t-distribution.

C) Neither a normal distribution nor a t-distribution can be used.

6) Construct a 95% confidence interval for the population mean, μ. Assume the population has a normal distribution. A sample of 20 college students had mean annual earnings of \$3120 with a standard deviation of \$677. 6) B

A) (\$1324, \$1567) B) (\$2803, \$3437) C) (\$2657, \$2891) D) (\$2135, \$2567)

7) Construct a 95% confidence interval for the population mean, μ. Assume the population has a normal distribution. A sample of 25 randomly selected students has a mean test score of 81.5 with a standard deviation of 10.2. 7) C

A) (56.12, 78.34) B) (87.12, 98.32) C) (77.29, 85.71) D) (66.35, 69.89)

8) Construct a 95% confidence interval for the population mean, μ. Assume the population has a normal distribution. A random sample of 16 fluorescent light bulbs has a mean life of 645 hours with a standard deviation of 31 hours. 8) A

A) (628.5, 661.5) B) (321.7, 365.8) C) (531.2, 612.9) D) (876.2, 981.5)

9) Construct a 98% confidence interval for the population mean, μ. Assume the population has a normal distribution. A study of 14 bowlers showed that their average score was 192 with a standard deviation of 8. 9) A

A) (186.3, 197.7) B) (115.4, 158.8) C) (328.3, 386.9) D) (222.3, 256.1)

10) Construct a 90% confidence interval for the population mean, μ. Assume the population has a normal distribution. In a recent study of 22 eighth graders, the mean number of hours per week that they watched television was 19.6 with a standard deviation of 5.8 hours. 10) B

A) (5.87, 7.98) B) (17.47, 21.73) C) (18.63, 20.89) D) (19.62, 23.12)

11) A random sample of 10 parking meters in a beach community showed the following incomes for a day. Assume the incomes are normally distributed. 11) B

$3.60 $4.50 $2.80 $6.30 $2.60 $5.20 $6.75 $4.25 $8.00 $3.00

Find the 95% confidence interval for the true mean.

A) ($2.11, $5.34) B) ($3.39, $6.01) C) ($4.81, $6.31) D) ($1.35, $2.85)

12) A local bank needs information concerning the checking account balances of its customers. A random sample of 15 accounts was checked. The mean balance was $686.75 with a standard deviation of $256.20. Find a 98% confidence interval for the true mean. Assume that the account balances are normally distributed. 12) D

A) ($326.21, $437.90) B) ($238.23, $326.41)

C) ($487.31, $563.80) D) ($513.17, $860.33)