Confidence Intervals Practice

Identify the "given" information and determine the appropriate formula for the following situations. Calculate the confidence interval for one item representing each of the formulas.

A)
$$\bar{x} \pm Z * \left(\frac{\sigma}{\sqrt{n}}\right)$$
 B) $\bar{x} \pm Z * \left(\frac{s}{\sqrt{n}}\right)$ C) $\bar{x} \pm t * \left(\frac{s}{\sqrt{n}}\right)$ D) $\hat{p} \pm Z *$

On day two of a study on body temperatures, 106 temperatures were taken. Suppose that we only have the first 10 temperatures to work with. The mean and standard deviation of these 10 scores were 98.44°F and 0.30°F, respectively. Construct a 95% 18、中十日、36日 confidence interval for the mean of all body temperatures. 7

by all managers.

A random sample of 19 women results in a mean height of 63.85 inches. Other studies have shown that women's heights are normally distributed with a standard deviation of 2.5 inches. Construct a 90% confidence interval for the mean height of all

The National Center for Education Statistics surveyed 4400 college graduates about the lengths of time required to earn their bachelor's degrees. The mean was 5.15 years and the standard deviation was 1.68 years. Based on the above information, construct a 98% confidence interval for the mean time required to earn a bachelor's degree by all college students.

doing physical exercise with a standard deviation of .75 hours. Find a 95% confidence interval for the population mean µ. 3

standard deviation of 6.7 hours. Find a 95% confidence interval for the mean time spent on housework per week by all married A random sample of 20 married women showed that the mean time spent on housework by them was 29.8 hours a week with a 29,8±2,013/6.7 women. 6

(C)
(Ac,
$$(ab)$$
 3A, (ab)
7) A fleet of 100 airplanes has an air time (time spent flying) standard deviation of 14,9 hours. A sample of 32 of these planes gave a mean air time of 49 hours. Construct a 90% confidence interval on the mean air time for this fleet.

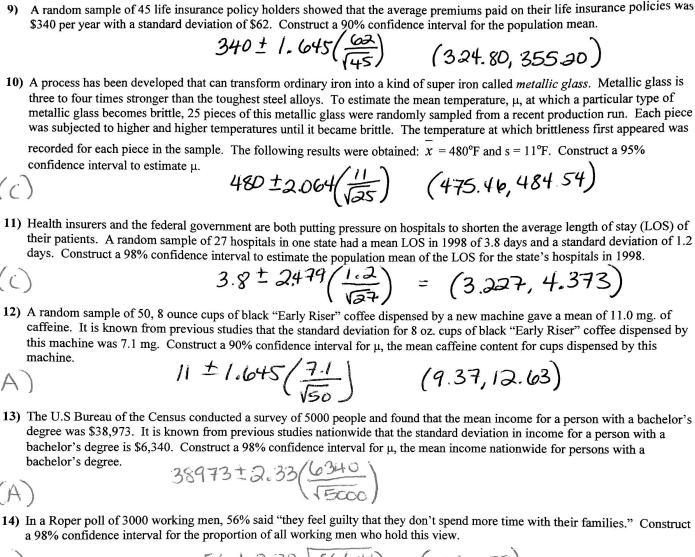
(A)
$$(A+a)$$

$$(A+a)$$

$$(A+a)$$

(44.66,53.33)

recorded, yielding the following results: x = .72 and s = .022. Construct a 99% confidence interval for the mean response time. response time to the new brake light. Fifty drivers are selected at random and the response time (in seconds) for each driver is General Motors. As part off a product safety evaluation program General Motors' engineers wish to estimate the mean driver Automotive engineers are continually improving their products/ Suppose a new type of brake light has been developed by 8



.56 ± 2,33 (56(.44) (.54, .58)

15) A bank took a sample of 100 of its delinquent credit card accounts and found that the mean owed on these accounts was \$2,130. It is known that the standard deviation for all delinquent credit card accounts at this bank is \$578. Give a 97% confidence interval for the mean amount owed on all delinquent credit card accounts for this bank.

2130 ± 2.17(578) = (2004.57, 2255.43)

16) A random sample of 100 movie theaters showed that the mean price of a movie was \$7.00 with a standard deviation of \$.80. Construct a 99% confidence interval for the population mean μ .

(6.794, 7,206) 7 ± 2.575 $(\frac{8}{100})$ $7\pm.206$ (6.794, 7.206) 17) In a *Time/CNN* telephone poll of 1012 adult Americans, 11% of the respondents said that Ronald Regan was a great president. 7±,206

Give a 98% confidence interval for the proportion of all adult Americans who think that Regan was a great president.

·11 ± (2.33) [11(.89) (.087, .133) p ± Z* / p(1-p)

18) Find n: A researcher wants to determine the 99% confidence interval for the mean number if hours per week that adults spend doing community service. How large of a sample should the researcher select so that the estimate will be within 1 hour of the population mean? Assume that the standard deviation for hours spent per week by adults doing community service is 3.

(2575) NO SME 2575 51 1n=60