

Name:

Statistics

Date:

Practice Quiz 6-A

1. Give the critical values for the following confidence intervals. Label each value as z_0 or t_0 .

Use t for means if σ is unknown.

a) $c = 90\%$, $n = 10$, $s = 20$

b) $c = 80\%$, $n = 55$, $s = 7.6$

c) $c = 90\%$, $n = 10$, $\sigma = 20$

d) $c = 78\%$, $n = 21$, $\sigma = 1.98$

2. Aiden, Nate, Raphael, and Wesley time how long they can hold their breath. The average time is 50 seconds. Without using the formula, explain how many degrees of freedom this situation has.

Degrees of freedom is the number of data values that must be known in order to be able to calculate all of them based on the relevant statistics.

3. Loic keeps track of his number of customers for the past five weekdays: 144, 108, 116, 130, and 122. Use this sample for a 95% confidence interval.

a) Identify or calculate the following values.

$\bar{x} =$

$s =$

$n =$

$df =$

Use one-var stats on a graphing calculator to find the sample mean and standard deviation.

Count the size of the sample.

Use the formula for degrees of freedom.

$c =$

$t_0 =$

$E =$

The confidence level is the area of the interval.

Cross-reference c and df in the t table.

Use the formula for margin of error.

b) Write the confidence interval in probability notation.

The probability of μ being in a certain range is equal to the area of the confidence interval.

c) Precisely complete the following statement: He is 95% confident that...

Make a claim about the population mean.

d) If he were doing a 90% confidence interval instead of 95%, would the confidence interval be larger, smaller, or the same size?

He doesn't need to be as confident that μ is within the interval.

e) If he knew the actual population standard deviation, rather than estimating it based on the sample, would the confidence interval be larger, smaller, or the same size?

He has more information.