

**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  $\sigma$  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. In a class of 32 students, there are 13 boys, 19 girls, 8 freshmen, 14 sophomores, 7 juniors, and 3 seniors. Using complete sentences and no formula, explain how many degrees of freedom this situation has.

*How many specific values are needed in order to know how many freshman girls there are, how many freshman boys, etc?*

3. Jack 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.

*What is the range in which we believe  $\mu$  to be?*

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  $\mu$  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.*