

You have 30 minutes. Take your time!

Note that this page has TWO sides!

Name: _____

ONE: A general expression for a confidence interval for the mean is:

$$P\left(\bar{x} - t_{\alpha/2, n-1} \cdot S_{\bar{x}} < \mu < \bar{x} + t_{\alpha/2, n-1} \cdot S_{\bar{x}}\right) = 1 - \alpha.$$

Answer the following questions. Be precise!

- a. What is \bar{x} ? _____
- b. What is μ ? _____
- c. What is α ? _____
- d. What is $n - 1$? _____
- e. What is $S_{\bar{x}}$? _____
- f. What is t ? _____

TWO: Following is the example for the G-test from Dytham, which we worked in class. The null hypothesis is that the distribution of progeny from a dihybrid cross follows an expected ratio.

a) Fill in the cells that are outlined in **BOLD**. There are six empty boxes to fill.

Type	Obs_freq	Exp_ratio	Exp_freq	o/e	o*ln(o/e)
	108	9	112.5	0.96	-4.41
TW	35			0.93	-2.41
DP	46	3	37.5	1.23	9.40
DW		1	12.5	0.88	-1.41
TOTAL		16	200		1.17
				=1.17*2	2.3362566
				=CHIDIST(1.17,3)	0.5056107
				=CHIINV(0.05,3)	7.8147277

b) Draw the Chi-square distribution for the test statistic, locate your calculated value, and indicate the rejection region. What conclusion do you draw, and why?

THREE: In statistical hypothesis testing one must choose a value for α (alpha) as part of the procedure.

a) What value is “usually” chosen? Why?

b) Complete this sentence: “The value, α , is the probability of _____

_____”

c) Why is it important to choose the value for α **before** you conduct the test?

Write nothing below this line.