Investigation: Create two sets of twenty random numbers stored as data lists.
randInt(0,100,20)->L1 and another in L2.
Sketch the scatterplot ▭▭▭▭▷
find the correlation
and draw the regression line
Now fill in the blanks:
I expected a correlation of _____.
The correlation I got _____ may be evidence of
    a weak _____ between the two variables.
But it may also simply arise from _____
    even when there is no _____ at all between
    the two variables.
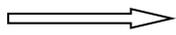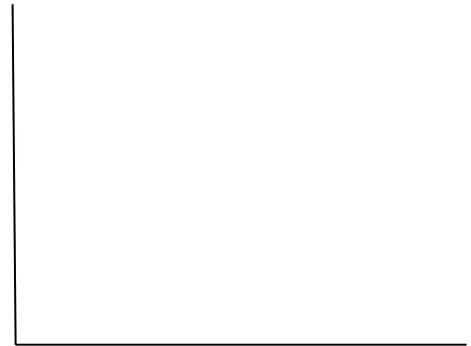
Using the lists (L1, L2) write the equation of your regression line _____
Building from previous topics: */* use the word bank in the video to fill in the blanks below*/*
We know that sample proportions vary from _____ to _____, and their distribution has a
_____ model*. That knowledge allows us to do _____ for proportions. We know that
sample _____ vary from sample to sample, also following a Normal model*. Not knowing
the _____ , though, forces us to use the almost-Normal _____
(with $n-1$ degrees of freedom) when we do inference.
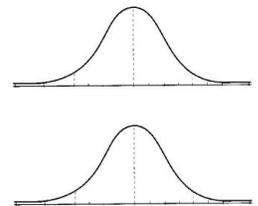
The last unit closed with the _____ test for _____ , allowing us to check for evidence of an association
between categorical variables. Our tour of introductory statistics is not complete until we can make inference about
associations between _____ variables as well.

If you did the Investigation again using two new lists of random numbers would you expect to get the same
regression line? _____ Explain why or why not?

Since we are interested in the association between the two quantitative variables we should focus our attention on
the _____ of the regression line. If r = 0, then the slope = ___. Changes in x explain ___ % of the _____ in y.

Comparing results fom the class, we notice _____ vary from sample to sample.
Each sample slope, , is an estimate of the true slope, . The sampling distribution of all
such slopes follows a Normal model*. However as with means the standard deviation of the
sampling distribution is _____ from the data, a _____, forcing us to use the
_____ (with ____ degrees of freedom) when we do inference.
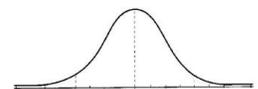
Now look back at 40A Correlation and Regression Review and write a null and alternative hypothesis (notation & words)

H_0:

H_A:

Write the 3 conditions needed for linear regression: Write the assumptions & conditions for a one sample t-test

    C1.   A1.

    C2.   C1.

    C3.   A2.

                                                             C2.

Once we check the required assumptions and conditions, we can proceed with inference about slope (association). It is easiest to think about the assumptions and conditions as a combination of those required for regression and inference for means. Let's write them for 40A Correlation & Regression Review problem:
We need to check five things:

1

2

.

3

4

5

When a hypothesis test indicates that an association exists, you should create a confidence interval for the slope of the true line. The calculator will do most of the work for us. They tricky part is getting the phrasing right:
Slope: The model suggests that math test scores decrease about 4.5 points for every increase in anxiety level.
Confidence Interval: I am 95% confident that the mean anxiety level is between _____ and _____.
Confidence Interval for slope: I am 95% confident that the average math test scores decrease between _____ and _____ percent with each increase in anxiety level.

TI 83/84
Hypothesis test for the slope: STAT, arrow to TESTS, select F:LinRegTTest, enter lists, Freq usually leave at 1, to store the equation as a function: VARS, arrow to Y-VARS, ENTER to select Function, and ENTER to select Y_1, highlight calculate, ENTER, use down arrow to scroll through the output.
Confidence interval for the slope: STAT, arrow to TESTS, select G:LinRegTInt, *inputs similar to above.*
TI 89
Hypothesis test for the slope: From the Statistics list editor, press 2nd F1 (F6 Tests), select A:LinRegTTest, enter lists, Freq usually leave at 1, to store the equation as a function press the right arrow key and select a function name, calculate or draw, Enter, use down arrow to scroll through the output.
Confidence interval for the slope: From the Statistics list editor, press 2nd F2 (F7 Ints), select 7:LinRegTInt, *inputs similar to above.*