

## AP Stats

### Chap 7 – How Do I Do All of This?

Let's work with the data that shows the change in tuition costs at Arizona State University during the 1990s.

Years (from 1990)	0	1	2	3	4	5	6	7	8	9	10
Tuition (\$)	6546	6996	6996	7350	7500	7978	8377	8710	9110	9411	9800

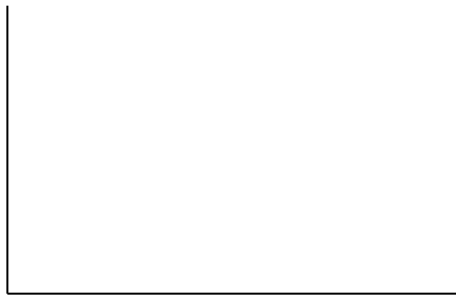
- name the lists that you will use as **YR** and **TUIT**, and enter the data.
- since we are curious as to whether the calendar year can predict the tuition, which variable should be on which axis?

- you will need the correlation between the two variables. find it and record it now.

$r =$

- view the scatterplot on your screen.

- sketch the scatterplot here:



- check the first three conditions for regression
  - 
  - 
  -
- what is the slope of the line? in context, what does it represent?
- what is the y-intercept of the line? in context, what does it represent?

- write the equation of the line using **meaningful variable names**...

- have the calculator find the equation of the line and add it to **Y1**. (Refer to your TI Tips, if you need to!)
- add the line to your scatterplot – both on this handout and on your calculator
- have the calculator display the list of **RESID** and copy the numbers here (to nearest cent):

Years (from 1990)	0	1	2	3	4
Residuals (\$)					
5	6	7	8	9	10

- the best kinds of residual plots are...

- have the calculator display the residuals plot. sketch it here:
- what kind of residual plot do you see?
- what does this tell you?

- what is the  $R^2$  value all about?

- describe what the scatterplot of the data says in words and numbers. Be sure to use the names of the variables and their units.
- interpret the slope (in a sentence!)
- interpret the y-intercept (in a sentence!)
- interpret the  $R^2$  value (in a sentence!)
- finally...explain if a linear model regression is reasonable/appropriate. What if the  $r$  value and the residuals plot do not agree? Which should you believe?