

## Finding the "best fit" Linear Equation for Data

### A. Plot data to check if linear

- Clear all Y= equations
- Put input into L1 and output into L2
- Under STAT PLOT, turn PLOT1 on and set Type to scatter plot (first one)
- Set appropriate window and GRAPH

### B. Find best fit line with linear regressions

- STAT key, CALC option, 4:LinReg option
- command is: LinReg L1, L2, Y1  
(Y1 found on VARS key, Y-Vars option, Function option, Y1)
- Here a = slope of line, b = y-intercept. Line is automatically put into Y1.
- GRAPH to see line and points

### C. To complete table of values and find SSE (sum of squares error)

- L1 and L2 already contain input and output values
- While graph is showing, use CALC key and VALUE option to find predicted output values
- In L3 (at top of list at list name) enter error (residuals) by using LIST key, then 7:RESID
- In L4 (at top of list at list name) enter L3<sup>2</sup> for error squared
- For SSE (sum of error squared), use STAT key, CALC option, and 1-Var Stats L4
- $\Sigma x$  will be the sum of the squared errors or SSE
- Compute average error =  $\sqrt{\frac{\text{SSE}}{n}}$