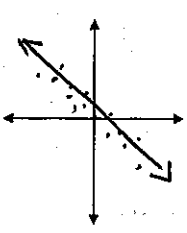
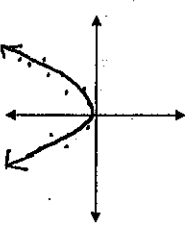
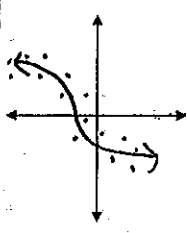
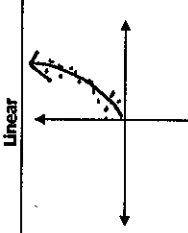
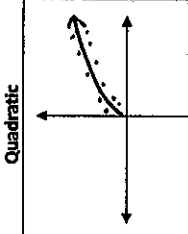


Regression Notes
Regression Analysis

Regression is a statistical technique used for estimating the relationship between variables (or different quantities).

Regression Analysis allows us to:
View the data as a scatter plot.
Calculator derives the graph of best fit for the data. You have to choose which graph to use.
Use this graph to make predictions.

Types of Regression:

		
Linear	Quadratic	Cubic
		
Exponential	Logarithmic	

Regression can be done by hand, but if done in the calculator it is more accurate. The calculator uses all the points versus only using two points when doing it by hand.

Correlation coefficient (r value) represented by the letter "r". It shows you whether or not there is a relationship between variables.

b) Strong c) Moderate d) Weak
"r" is close to -.8 to .8 Data points do not follow graph closely
-1 or 1 (not set in stone)

Regression Notes
Inputting / Plotting / Graphing

1. Inputting data into Graphing Calc (TI 83/84)

- Clear out y = CLEAR ENTER
- Press STAT 1: Edit, ENTER
- Clear L₁ and L₂, by going to the top of the list so L₁ or L₂ is highlighted. Then press CLEAR ENTER
- Enter the data into L₁ (independent variable, x) and L₂ (dependent variable, y)
$$\begin{matrix} L_1 & L_2 \\ Xs & Ys \end{matrix}$$

Do not enter any 0 values for L₂ for exponential graphs

Once all data is entered, press 2nd MODE to get back to the home screen

2. Graphing the Data (Scatterplot)

- Press Y=, scroll up to Plot 1 and Press ENTER Then press Graph
- Adjusting Viewing Screen: Press Zoom Zoom Stat

**This turns the scatter plot on

This will give you the correct window screen, for you to see your scatter plot graph

3. Regression Equation

- Press STAT scroll over to Calc
- Choose the type of regression you want, then ENTER
i.e. 4. LinReg (ax + b) (Linear)
5. QuadReg (Quadratic)
6. CubicReg (Cubic)
7. QuartReg (Quartic)
8. ~~HiReg~~ (a+bx) Don't use this one!
9. LnReg (Logarithmic)
0. ExpReg (Exponential) y=ab^x
A. PwrReg (Power) y=ax^b
B. Logistic

- Press STAT scroll to Calc, pick regression, VAR scroll over to Y-Vars, and press ENTER (x 3) ...three times

Write your regression as y = ... *round to 3 decimal places,
Ex: y = 98.246(.919)^x

Turning on Correlation Coefficient (r value)
2nd 0 (Catalog)
X⁻¹, then scroll down to Diagnostic On
Enter x 2

Regression Notes

4. Making Predictions

a) Given the x-value (use the data table provided in calc)

1.
2. Tbl Start =
3.

b) Given the y-value

1. Type the y-value into Y2=
2.
3. 5: Intersect
4. (x3) ...three times