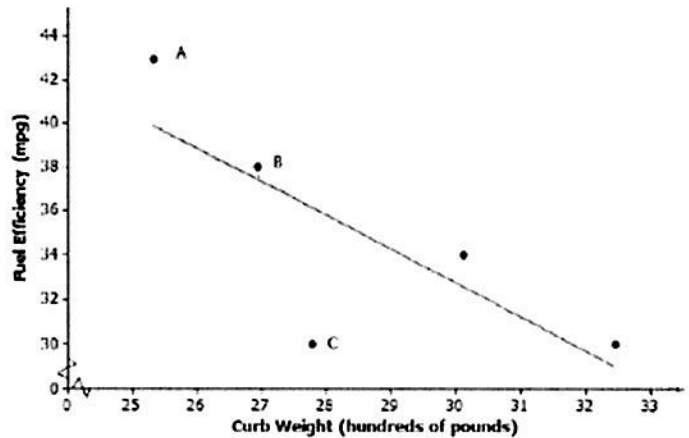**Do Now:** Here is the scatterplot with the line of best fit drawn in.

a) Given point B, state whether the residual will be either positive or negative & far or close. Explain your answer.

⊕ and close b/c its above line of best fit.

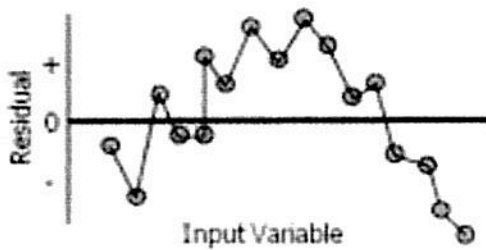b) Given point C, state whether the residual will be either positive or negative & far or close. Explain your answer.
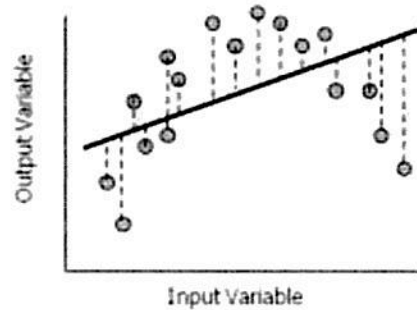
⊖ and far b/c its below line of best fit.

AIM: Graphing Residuals

A _____curve_____ in the residual plot indicates a _non-linear_ relationship in the original data set.
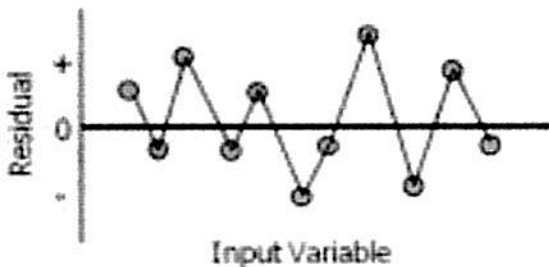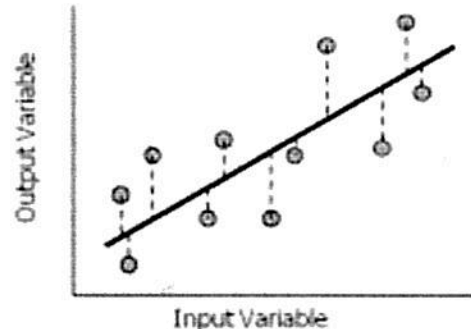
Residual

Scatter Plot

A _____random_____ scatter of points in the residual plot indicates a _____linear_____ relationship in the original data set.

Residual

Scatter Plot

3) The table below represents the residuals for a line of best fit.

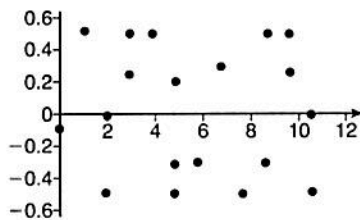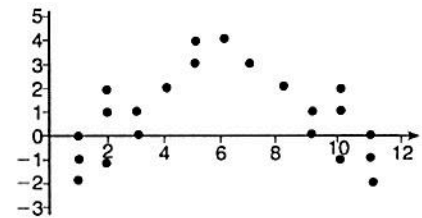| x	2	3	3	4	6	7	8	9	9	10
Residual	2	1	−1	−2	−3	−2	−1	2	0	3

a) Plot these residuals on the set of axes below.
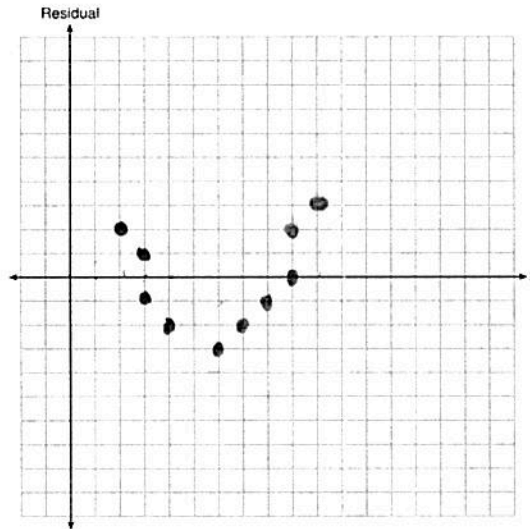
b) Using the plot, assess the fit of the line for these residuals and justify your answer. EXplaiN

curved which indicates
a non-linear relationship

4) The residual plots from two different sets of bivariate data are graphed below.


Graph A   Graph B

Explain, using evidence from graph A and graph B, which graph indicates that the model for the data is a good

Graph A because the points are random
(scattered)

1) For each of the following **residual plots**, what conclusion would you reach about the relationship between the variables in the original data set? Indicate whether the values would be better represented by a linear or non-linear relationship. Explain your answer.

A.

non-linear b/c its curved

B.
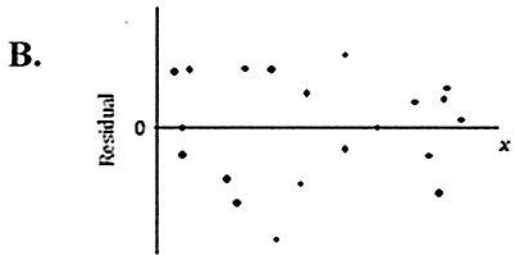
linear b/c its random

C.

non-linear b/c its curved

2) The curb weight of a car is the weight of the car without luggage or passengers. The table below shows the curb weights (in hundreds of pounds) and fuel efficiencies (in miles per gallon) of five compact cars.

Curb weight (100 lb	Fuel Efficiency (miles per gallon)	Residual
12.95	26.68	-0.42
13.81	29.48	1.08
14.66	28.11	-1.57
14.88	30.93	0.97
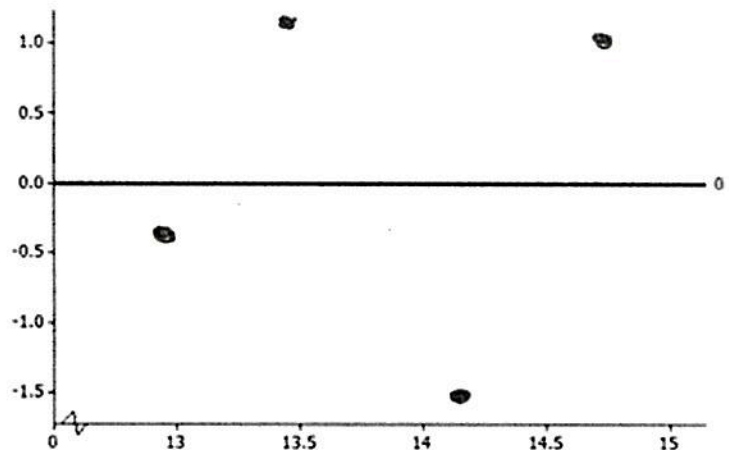
c. Does the residual plot suggest a linear relationship? Explain. It is linear because it is random