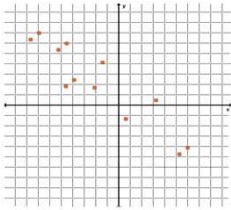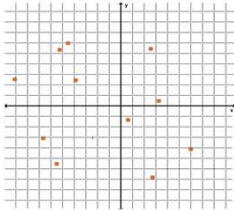**Name** _____

Fitting a Line to Data; Predictions with Linear Models

Date _____

1. Describe the relationship between the x and y variables shown on this scatter plot.

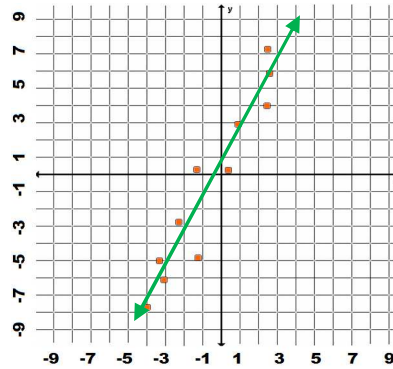> There is a fairly good negative correlation between x and y.

2. Describe the relationship between the x and y variables shown on this scatter plot.

> There does not appear to be a correlation between x and y.

3. Draw your best fitting line for the data points on this graph.

4. Write an equation that models the relationship between x and y shown on the above graph.

> y = 2x + 1

5. Use the equation you created to predict what y would equal if x was 9.

> 19

6. Is this prediction an interpolation or an extrapolation?
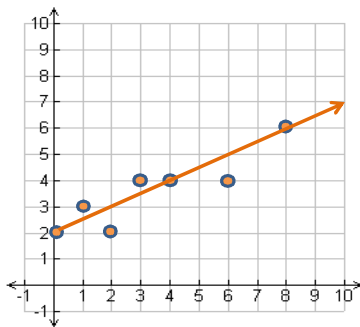
> extrapolation

7. If you were to make a prediction of y's value when x = 0, what you would call this prediction?

> interpolation

8.
The table below shows the results of a survey of students after a recent math test. Plot the data, fit a line, and create an equation to describe the line. Your slope and your y-intercepts will only be estimates, and may vary from my estimates.

x: hours spent studying	y: questions answered correctly		
0	2		
4	4	m	½
2	2	b	2
6	4	equation	y = ½x + 2
1	3		
3	4		
8	6		

9. Based upon your work above, make an interpolation to estimate the number of questions you would correctly answer if you studied for 7 hours.

> 5.5