

Math 9

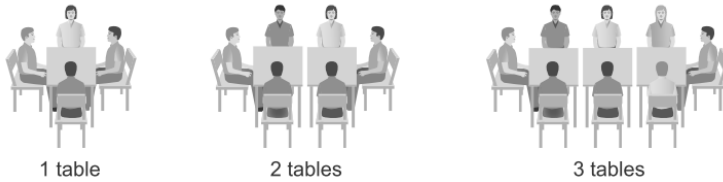
Name: _____

4.2 – Linear Relations I

Date: _____

Creating an Equation from a Table of Values (TOV)

Last time, we studied the following pattern:



Let, n represent “the number of tables” and let, P represent “the number people seated around the n tables.”

Complete the following TOV:

Determine the equation that relates n and P :

n	P
1	
2	
3	
4	
5	
10	
22	

Determine the equations that relate the given variables in the following TOVs:

x	y
1	7
2	11
3	15
4	19

m	F
1	-3
2	0
3	3
4	6

c	E
1	0
2	0.5
3	1.0
4	1.5

t	S
1	10
2	8
3	6
4	4

Creating a TOV from an Equation

Describe the following Linear Relations as a TOV:

$$y = 2x + 1$$

$$C = 3n + 3$$

$$P = -2d - 4$$

$$S = \frac{1}{2}t + 3$$

x	y

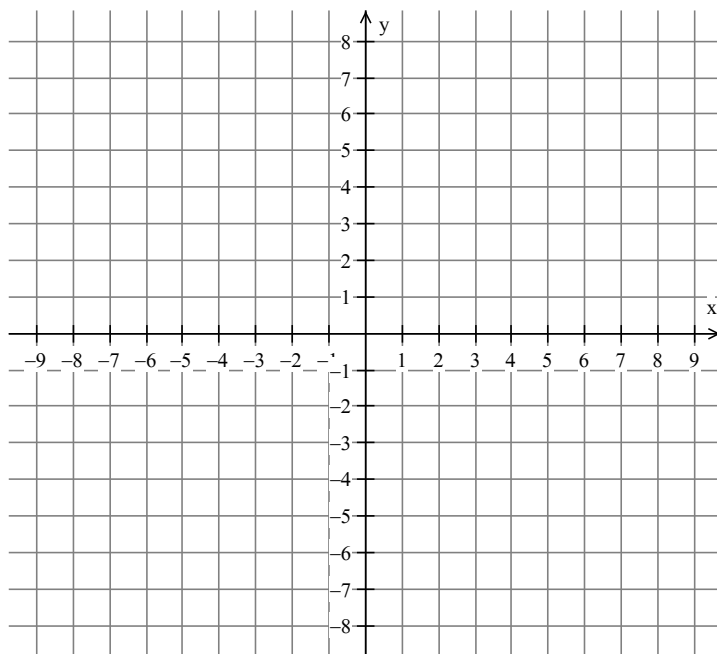
The variable in the **first** column is called the _____ variable.

The variable in the **second** column is called the _____ variable.

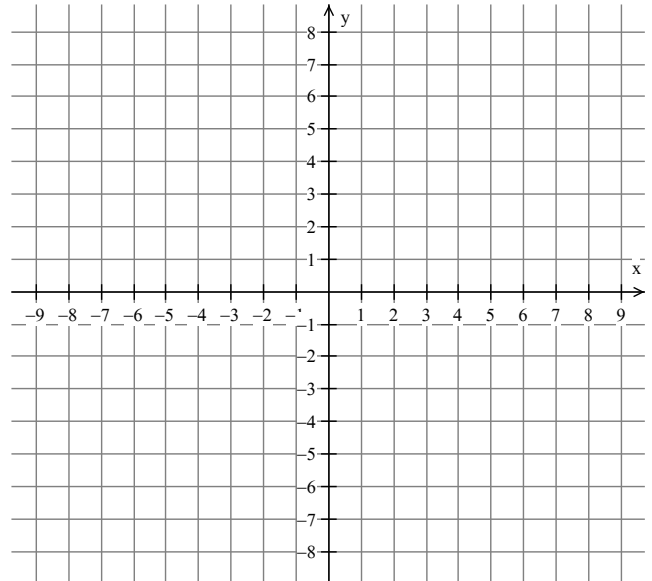
Sketching a Graph from an Equation

Sketch the graph of $y = 2x + 1$.

- Create a TOV for the equation to obtain a set of coordinates.
- Plot the coordinates on the graph.
- Join the points with a straight line.....**ONLY IF IT MAKES SENSE TO DO SO!!!!**



Sketch the graph of $P = -2d - 4$



Solving Problems using a Linear Relation Model

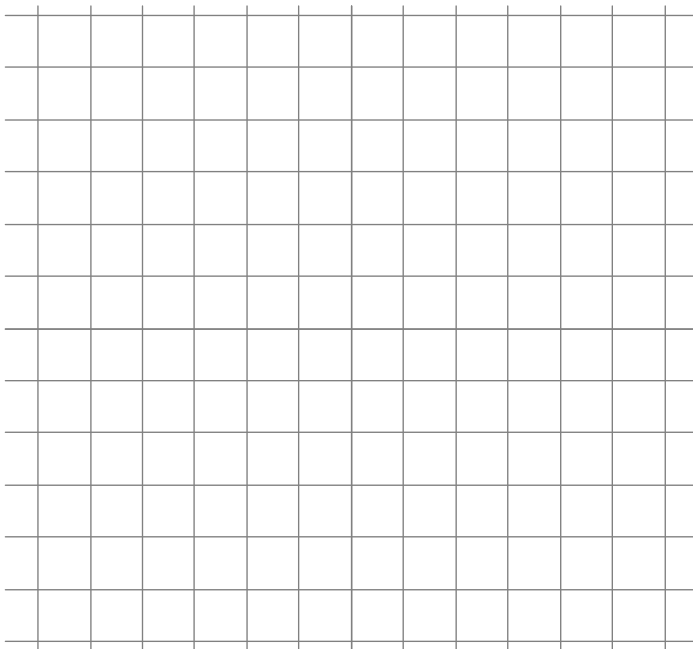
A plumber charges \$40 to come to your house and then \$15.50 for each hour that he has to work.

- Create a TOV that shows the total cost for calling the plumber for 0, 1, 2, 3, and 4 hours.
- Is the relationship between the number of hours worked and total cost a **linear** relationship? Explain why or why not?
- Describe the relation as an equation. Choose appropriate variables.
- Explain how to determine the total cost if the plumber is required to work for 11 hours...heaven forbid!

The Student Council is planning a dance. The cost of renting a DJ is \$200. The tickets cost \$4 each.

a. Write an equation that describes the relationship between **the total profit** and **the number of students that attend the dance**.

b. Sketch a graph that represents the relationship.



c. How many students have to attend in order for Student Council to break even?