Name_____ Date_____

Mrs. Roumbos 8R Period_____

Slope

SLOPE OF A LINE

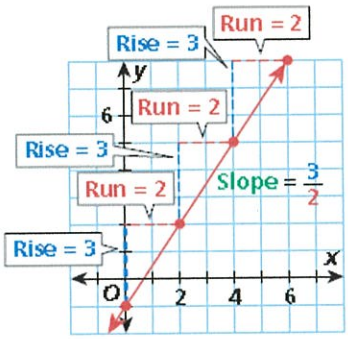
The **rise** is the difference of the y-values of two points on a line.

The **run** is the difference in the x-values of two points on a line.

The **slope** of a line is the ratio of rise to run for any two points on the line.

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\text{change in } y}{\text{change in } x}$$

(Remember that y is the dependent variable and x is the independent variable.)



**The slope of a line is also known as a rate of change (& ratio)

I. **Slope of two coordinates**

Formula: $m = \frac{y_2 - y_1}{x_2 - x_1}$

Steps: 1) Label the coordinates
2) Plug in the values
3) Simplify

Ex: What is the slope of the graph of the line passing through the points:

1) (1, 6) & (4, 8)

2) (5, 11) & (3, 7)

3) (4,10) & (6,8)

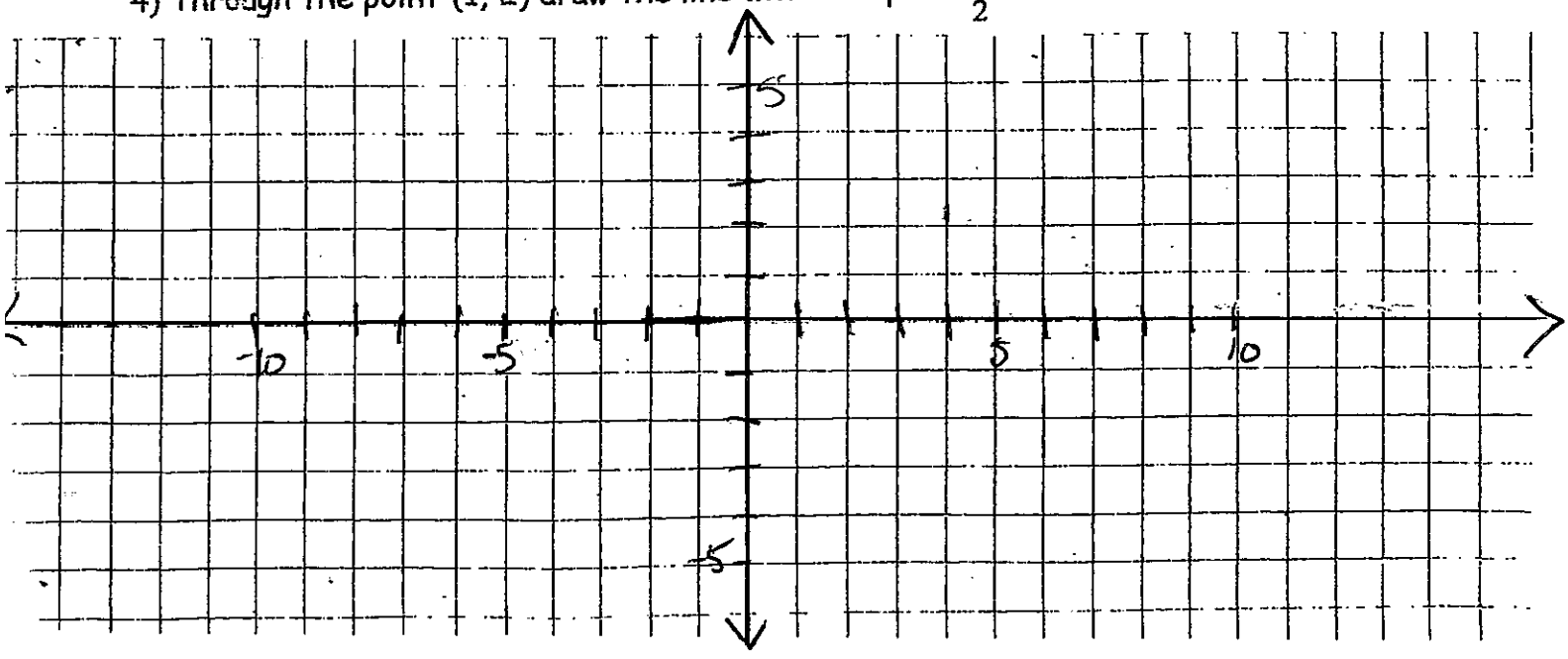
4) (6,7) & (9, 13)

1) Find the slope of the line that contains the points (2, 1) and (5, 7) and describe the direction of the line.

2) Find the slope of the line that contains the points (-10, 3) and (-8, -1) and describe the direction of the line.

3) Find the slope of the line $y = -4x + 5$ and describe the direction of the line.

4) Through the point (1, 2) draw the line whose slope is $\frac{3}{2}$.



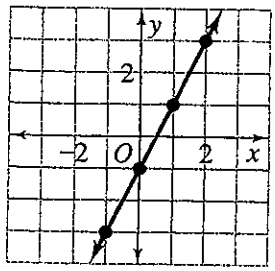
Math 8R

Name _____

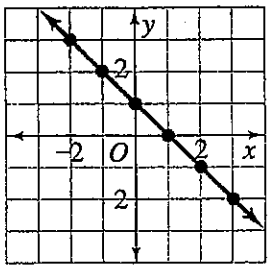
Date _____

EXERCISES *On Your Own*

Find the slope of each line.

1. 

Slope = _____

2. 

Slope = _____

3. *Writing* Explain which roof is steeper: a roof with a rise of 5 and a run of 3 or a roof with a rise of 3 and a run of 5.

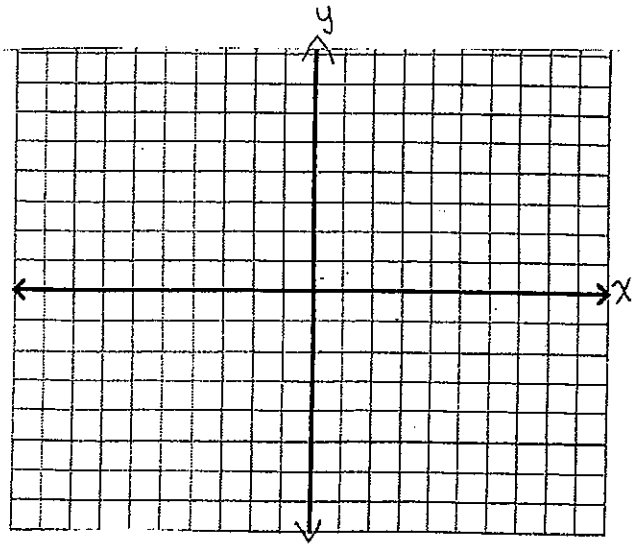
_____

_____

_____

For each linear equation, make a table of solutions. Then graph the line and find the slope.

4. $y = 3x - 1$

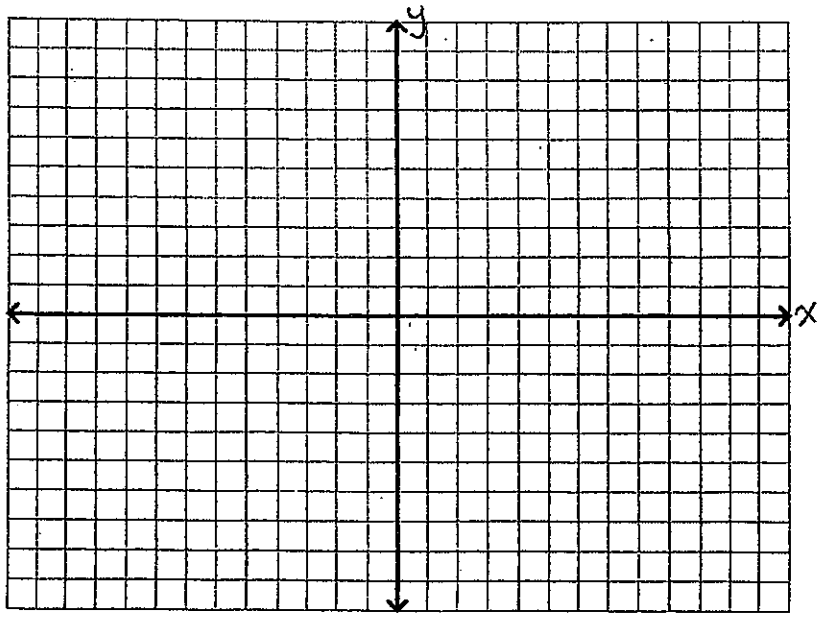


Turn Over

5. **The points from each table lie on a line. Find the slope of the line. Then graph the line.**

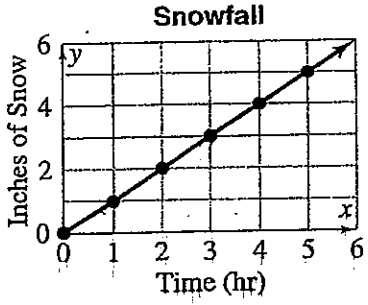
x	4	5	6	7
y	−2	0	2	4

Slope = _____



---

6. **Find the slope of the line. Describe how one variable changes in relation to the other.**



Slope = _____