

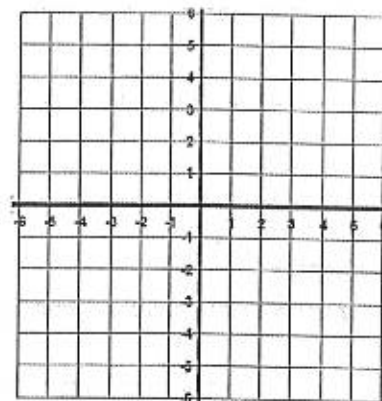
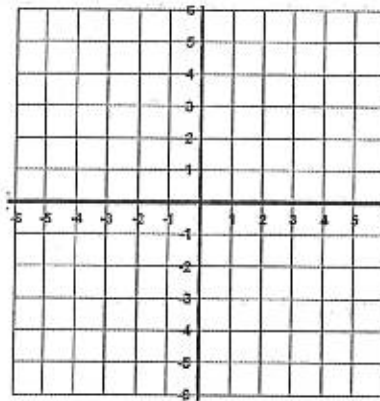
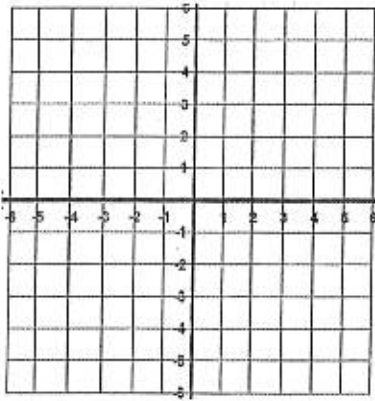
4.2 – Slope Formula

Graph the given points. Find the slope of the line through the points.

1. (3,5) (2,2)

2. (1,-1) (-1,1)

3. (1,-2) (2,0)



$$\text{Slope} = \frac{\text{rise}}{\text{run}} = \frac{\text{vertical change}}{\text{horizontal change}}$$

When given two points we can use the Slope Formula to find the slope of the line containing the points without having to graph them and count the rise to run ratio.

Let's name the two given points (x_1, y_1) and (x_2, y_2) .

$$\text{Slope Formula} = \frac{\text{change in } y}{\text{change in } x} = \frac{y_2 - y_1}{x_2 - x_1} \text{ OR } \frac{y_1 - y_2}{x_1 - x_2}$$



ORDER OF SUBTRACTION MUST BE CONSISTENT ON TOP AND BOTTOM!



Let's use the problems above to calculate the slope of the line using the slope formula.

1. (3,5) (2,2)

2. (1,-1) (-1,1)

3. (1,-2) (2,0)

4.2 – Finding Slope from a Table

QUESTION: How could you find the slope of the line from the table?

ANSWER: There are two methods. They are the same process but described in different ways.

Method #1 - Choose any two points from the table and use the slope formula.

Method #2 – Look the ratio $\frac{\text{change in } y}{\text{change in } x}$ in the table.

EXAMPLES

The points in the table lie on a line. Find the slope of the line.

A.

x	-3	-2	-1	0
y	6	4	2	0

B.

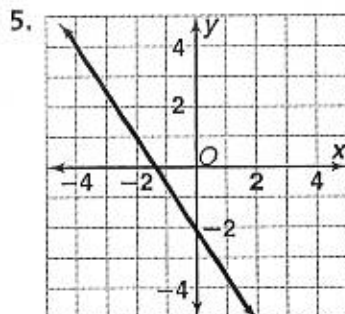
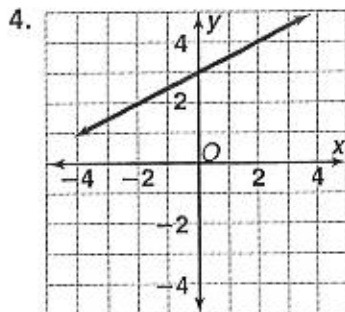
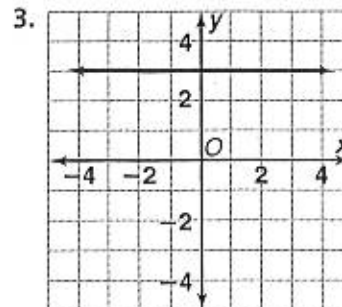
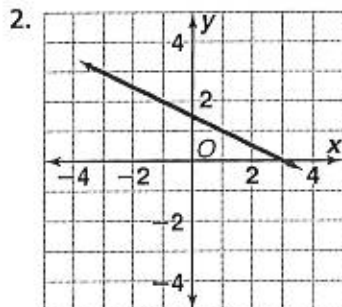
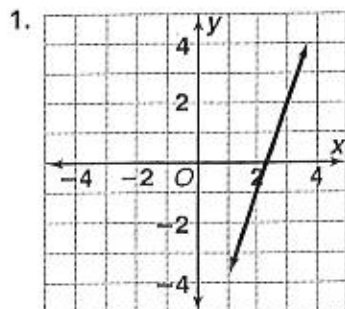
x	1	3	5	7
y	2	5	8	11

Skill: Finding Slope

Investigation 4

Moving Straight Ahead

Find the slope of each line.



Investigation 4

Moving Straight Ahead

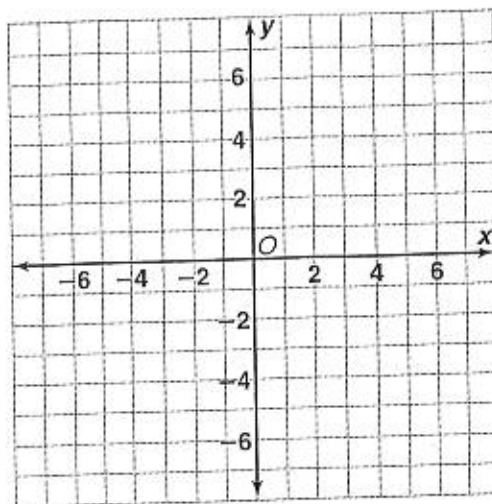
Skill: Finding Slope *(continued)*

For Exercises 6–7, the points from each table lie on a line. Use the table to find the slope of each line. Then graph the line.

6.

x	0	1	2	3	4
y	-3	-1	1	3	5

slope =



7.

x	0	1	2	3	4
y	5	3	1	-1	-3

slope =

Find the slope of the line that passes through each pair of points.

8. $A(1, 1), B(6, 3)$

9. $J(-4, 6), K(-4, 2)$

10. $P(3, -7), Q(-1, -7)$

11. $M(7, 2), N(-1, 3)$