

Date: _____

Slope – Part 2

Warm Up

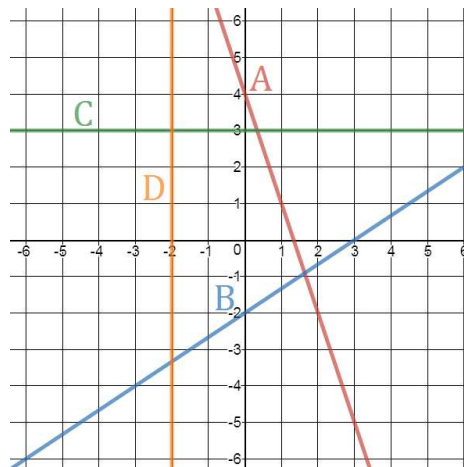
1. State the slope of each line shown on the graph.

A. _____

B. _____

C. _____

D. _____

2. Calculate the slope of the line segment joining the two points: $(-2, 5)$ and $(-6, 8)$.

Recall:

$$\text{slope} \rightarrow m = \frac{\text{rise}}{\text{run}}$$

$$\text{change in "y"} \rightarrow \Delta y$$

$$\text{change in "x"} \rightarrow \Delta x$$

C. Determining slope from a table of values.

Example 1

Determine the slope of the linear relation shown in the table.

a.

x	y
2	-4
-1	-6
-4	-8
-7	-10

b.

x	y
0	8
-2	12
-4	16
-6	20

c.

x	y
-1	9
0	6
1	3
2	0

D. Finding Slope Given an Equation

Example 2

Find the slope of each line by generating a table of values (TOV).

a. $y = 3x - 2$

b. $y = -\frac{3}{2}x + 1$

E. The y-intercept

The following graph illustrates the total cost, C , in dollars, of a taxi fare for a distance of d kilometres.



The y-intercept is the y-value where the graph crosses the y-axis

Complete a Table of Values for each of the following equations and then graph them.

a) $y = \frac{1}{2}x$

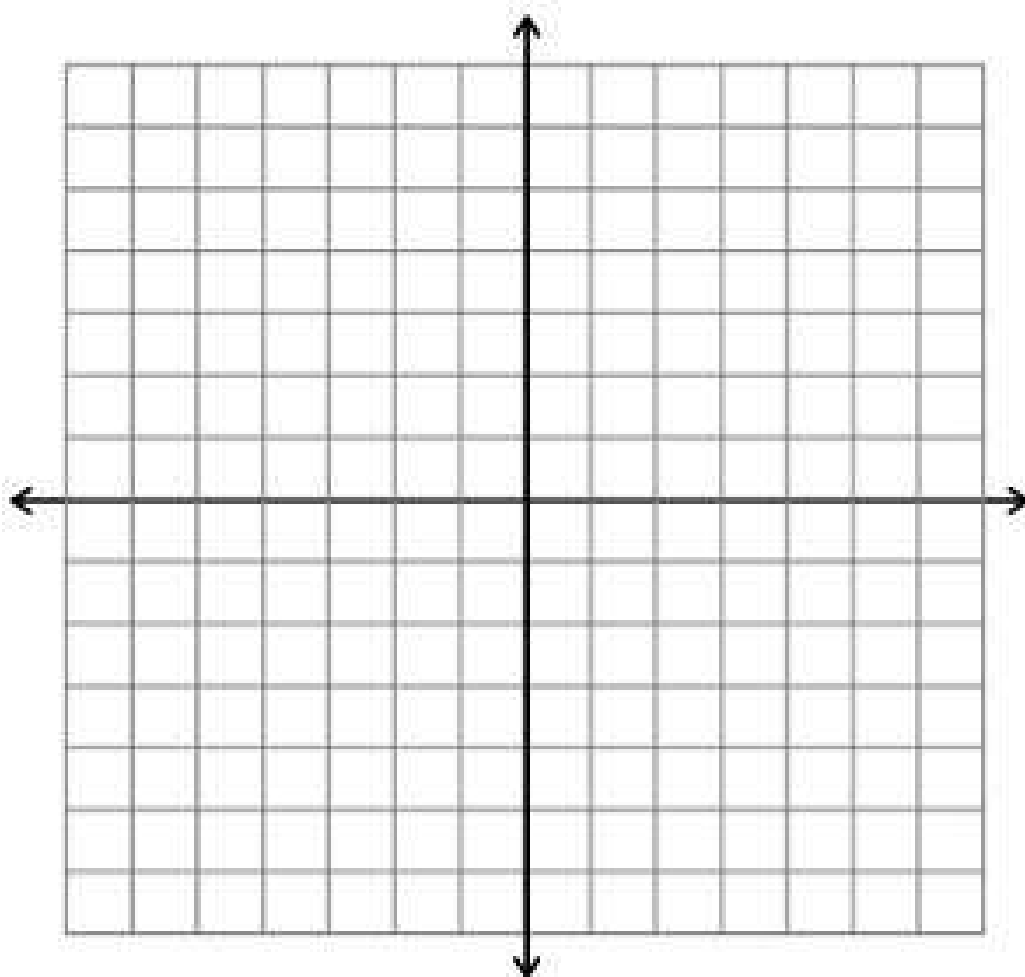
x	y

b) $y = \frac{1}{2}x + 3$

x	y

c) $y = \frac{1}{2}x - 2$

x	y



Putting it all together

Recall that we use the symbol, m , for slope.

We use the symbol, b , for the y-intercept.

The equation of a line can be written as: $y = mx + b$

Example 2

State the slope and y-intercept of the following lines:

a. $y = 4x - 5$

b. $y = -x + 6$

c. $y = -\frac{1}{2}x + \frac{5}{2}$

Slope: _____

Slope: _____

Slope: _____

y-intercept: _____

y-intercept: _____

y-intercept: _____

Example 3:

Write the equation of the line using the information given.

a. $m = 2$

b. $m = -1$

c. $m = -\frac{2}{3}$

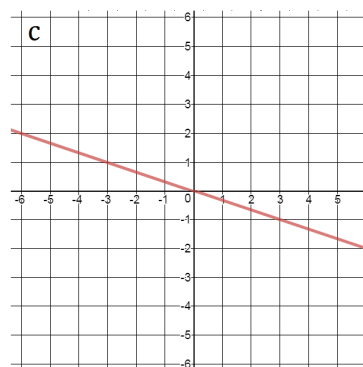
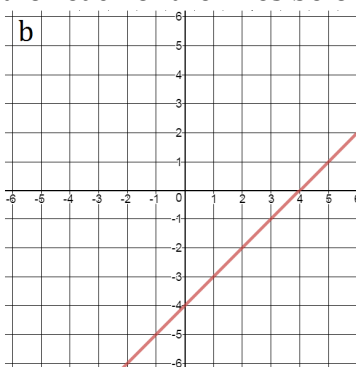
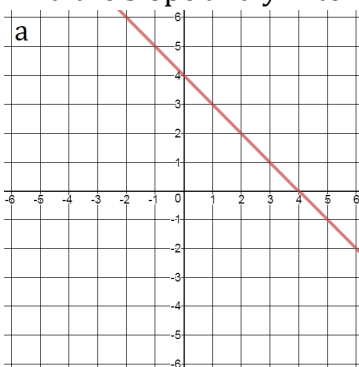
$b = -3$

$b = \frac{4}{3}$

$b = -\frac{4}{5}$

Homework:

1. Find the slope and y-intercept for each of the lines below.



2. State the slope and y-intercept of the following lines:

a. $y = 4x - 5$

b. $y = -x + 6$

c. $y = -\frac{1}{2}x + \frac{5}{2}$

3. Write the equation of the line using the information given.

a. $m = 2$

b. $m = -1$

c. $m = -\frac{2}{3}$

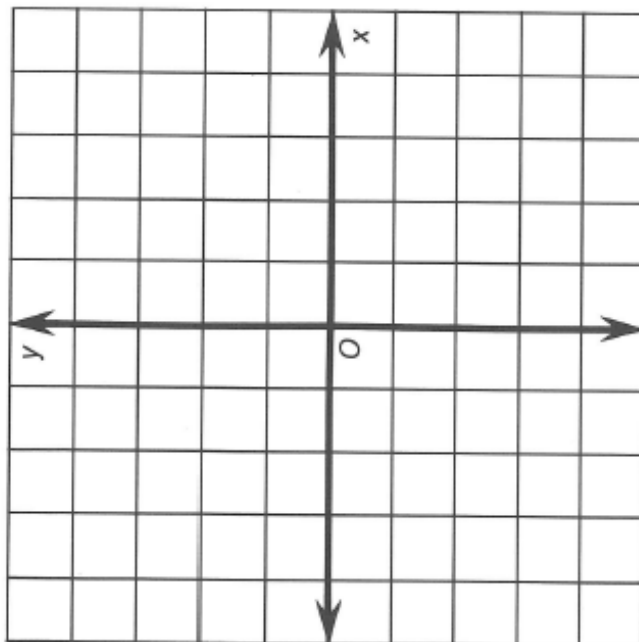
$b = -3$

$b = \frac{4}{3}$

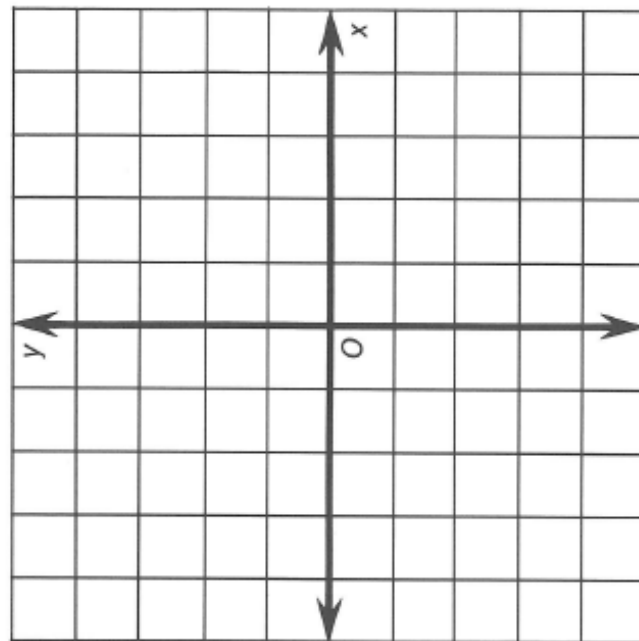
$b = -\frac{4}{5}$

What Might You Have If You Don't Feel Well?

For each exercise, draw a line through the two given points. Determine the *slope* of this line. Find your answer at the bottom of the page and write the letter of that exercise above it.



- (E) $(1, 2)$ and $(4, 4)$ (G) $(-4, -2)$ and $(2, -5)$
 (O) $(3, -3)$ and $(4, 1)$ (S) $(-2, 4)$ and $(0, -2)$



- Ⓐ $(0, -1)$ and $(4, 3)$ Ⓥ $(-1, 0)$ and $(-3, 4)$
 Ⓑ $(-5, 2)$ and $(-3, -3)$ Ⓦ $(5, -1)$ and $(-2, -4)$

$4\frac{2}{3}$	$1\frac{1}{2}$	$3\frac{1}{7}$	1	-2	$2\frac{1}{3}$	-3	$7\frac{2}{3}$	4	$5\frac{1}{2}$	0
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