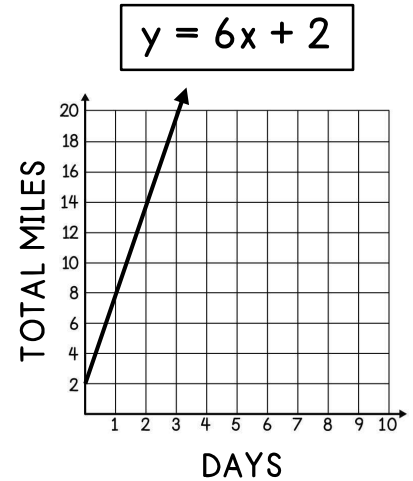


SLOPE-INTERCEPT FORM: PART I

Xander has biked 2 miles so far this week and plans to bike an average of 6 miles each day over the next several days. Xander wrote the equation and created the graph to represent x , the number of days and y , the total number of miles traveled on his bike.

- Find the slope of the graph. Where do you see this value in Xander's equation?
- What value does the graph touch on the y -axis? Where do you see this value in Xander's equation?



Xander's equation is written in slope-intercept form which is described below.

SLOPE-INTERCEPT FORM	<ul style="list-style-type: none"> Slope-intercept form, or $y = \underline{\hspace{1cm}}x + \underline{\hspace{1cm}}$, is one way to write the equation of a <u> </u> relationship. The y-intercept of a graph is the value of y where the line <u> </u> the y-axis, or when $x = \underline{\hspace{1cm}}$. 	$y = \underbrace{mx} + \underbrace{b}$
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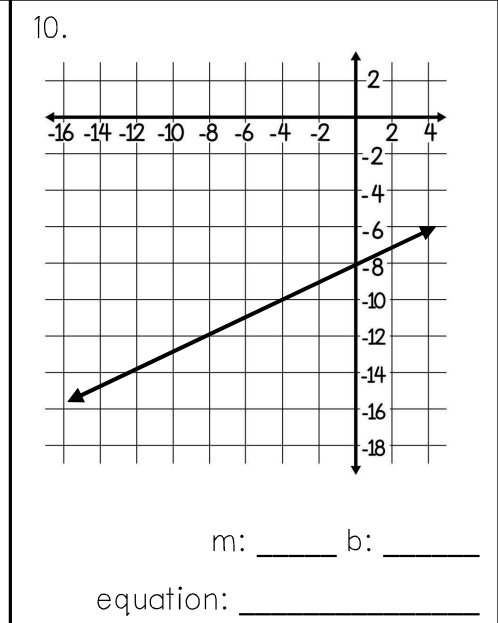
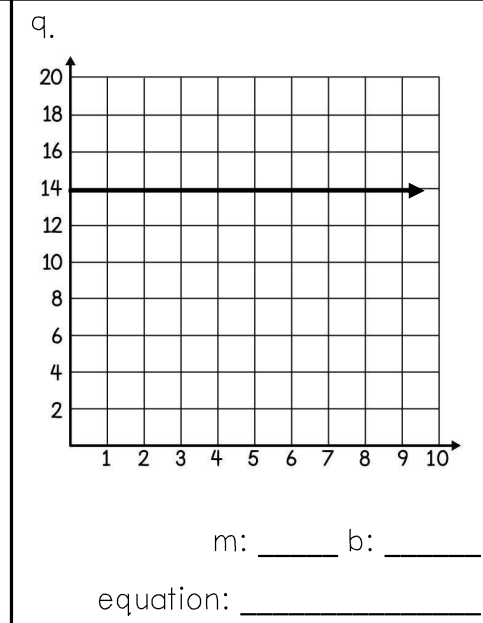
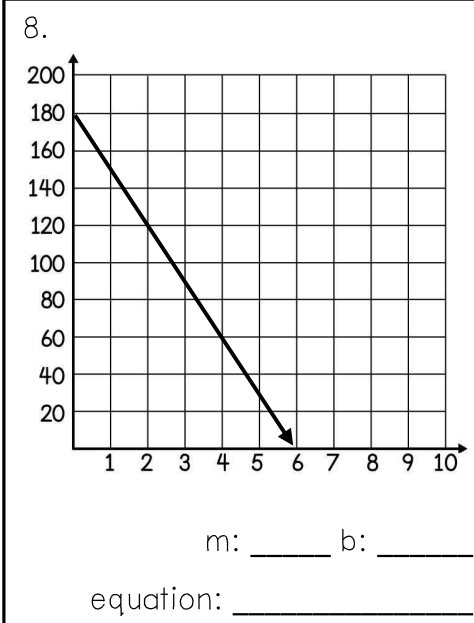
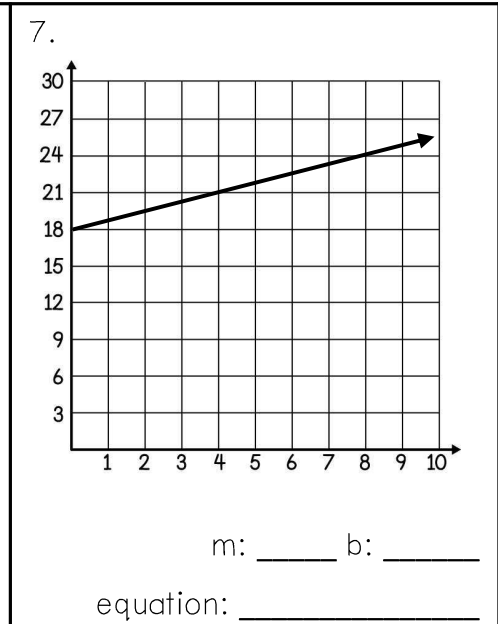
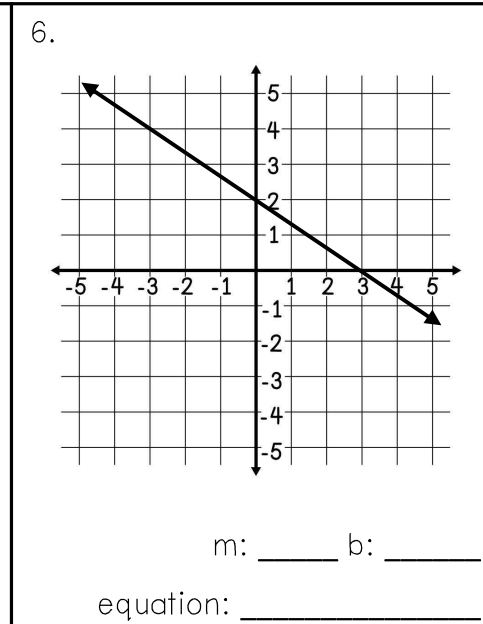
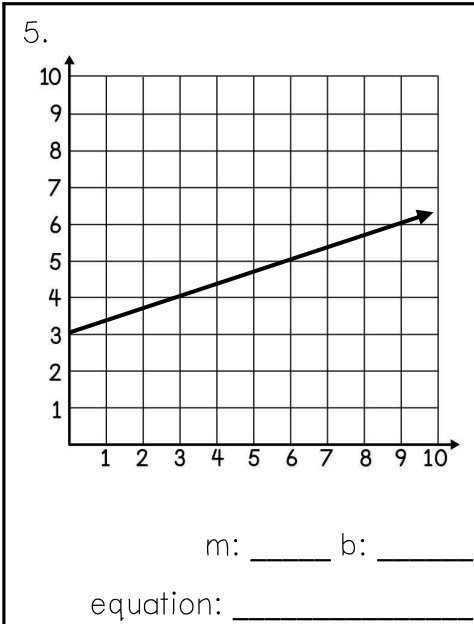
In 1-3, use the given information to write an equation of the line in slope-intercept form.

1. slope = -9, y -intercept = 2 $y = \underline{\hspace{1cm}}x + \underline{\hspace{1cm}}$	2. $m = 4.5$, $b = -10$ $\underline{\hspace{2cm}}$	3. A line has a slope of -5 and passes through the origin. $\underline{\hspace{2cm}}$
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4. Complete the table below by recording the slope, the y -intercept and a sketch of each linear equation's graph.

	$y = x - 5$	$y = 3x$	$y = -5x + 7$
SLOPE (m)			
Y-INT (b)			
GRAPH			

For each graph below, record the slope, y-intercept, and equation in slope-intercept form.



11. Matt is going to create a graph of the equation $y = \frac{4}{5}x - 7$. Mark each statement as true or false and correct any false statements.

_____ a. Matt's graph will cross the y-axis at $(-7, 0)$.

_____ b. Matt's graph will increase from left to right.

12. Circle the name of any student who wrote an equation that could possibly represent the graphed line shown at the right.

JAVIER

$y = -3x - 2$

KARISSA

$y = 2x - 3$

LIAM

$y = 2x + 3$

Summarize today's lesson:

SLOPE-INTERCEPT FORM: PART I

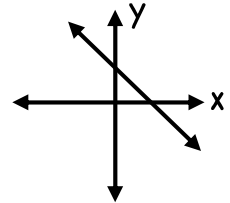
Apply your knowledge of slope-intercept form to answer the questions below.

1. Harper is going to create a graph of the equation $y = -0.5x + 12$. Which of the following will be true about the graph?

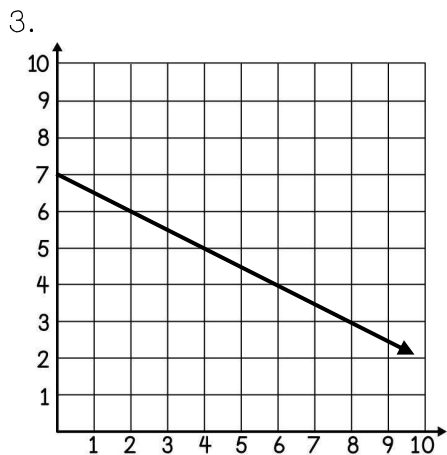
- a. The graph will contain the origin.
- b. The graph will increase from left to right.
- c. The graph will cross the x-axis at $(12, 0)$.
- d. The graph will have a slope of -0.5 .

2. Khari graphed the line below. Which equation could represent Khari's graph?

- a. $y = -2x - 3$
- b. $y = 3x + 4$
- c. $y = -4x + 3$
- d. $y = -2x - 5$

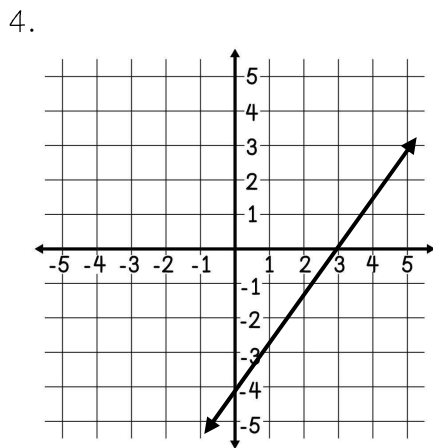


For each graph below, record the slope, y-intercept, and equation in slope-intercept form.



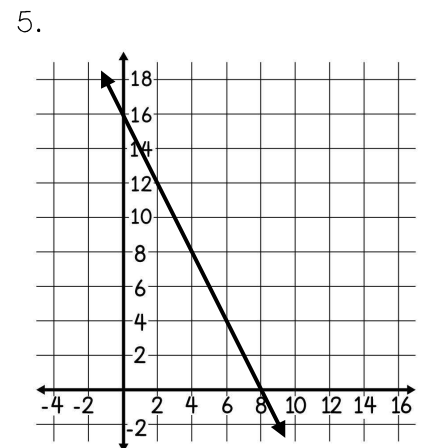
m: _____ b: _____

equation: _____



m: _____ b: _____

equation: _____

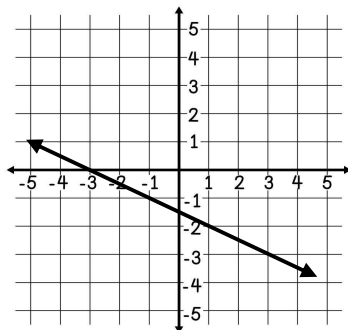


m: _____ b: _____

equation: _____

6. Li wrote the equation below to represent the graph shown. Explain her errors and correct the equation.

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



7. For a and b, write an equation in slope-intercept form that meets the given criteria.

- a. A negative slope and passes through the origin
- b. Slopes upward from left to right and has a y-intercept below the x-axis.

8. Mr. Brown asked his students to write an equation that represents a line with a positive slope and a negative y-intercept. Circle the name of any student who correctly completed the task.

EZRA

$$y = -5x + 2.5$$

AALIYAH

$$y = 4x - 7$$

JACOBY

$$y = -3x - 11$$

PENNY

$$y = \frac{4}{5}x - 20$$