Chapter 2 section 3 **SLOPE**

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

(23) $(-6,-3)$, $(6,7)$

slope = $m = \dfrac{y_2 - y_1}{x_2 - x_1}$ $\quad (-6,-3)$, $(6,7)$ $\quad x_1, y_1 \quad x_2, y_2$

$$m = \frac{7-(-3)}{6-(-6)} = \frac{7+3}{6+6} = \frac{10}{12}$$

$$\boxed{m = \frac{10}{12} = \frac{5}{6}}$$

(24) $(5.5, -5.5)$, $(11, -7)$

slope = $m = \dfrac{y_2 - y_1}{x_2 - x_1}$ $\quad (5.5,-5.5)$, $(11,-7)$ $\quad x_1 \; y_1 \quad x_2 \; y_2$

$$m = \frac{-7-(-5.5)}{11-5.5} = \frac{-7+5.5}{11-5.5} = \frac{-1.5}{5.5}$$

$$\boxed{m = \frac{-1.5}{5.5}}$$

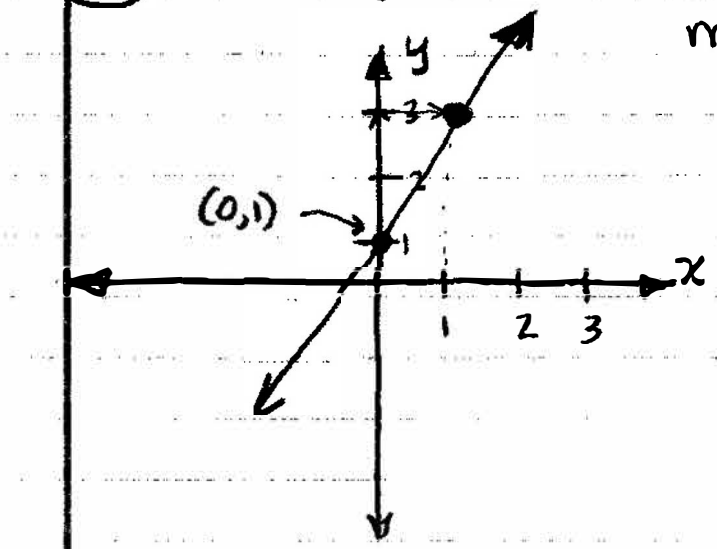
Chapter 2.3 continued

Graph the line passing through the given point with the given slope

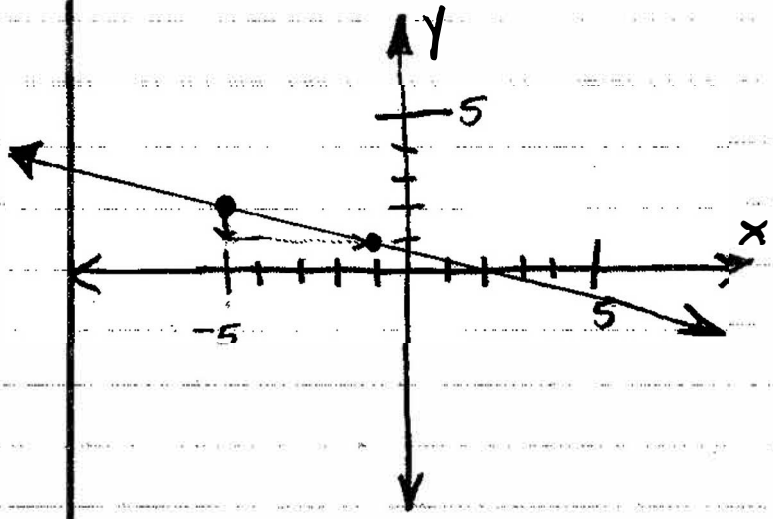
(25) $(0,1)$, $m=2$

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

$m = 2 = \frac{2\uparrow}{1\rightarrow}$



(26) $(-5,2)$, $m = -\frac{1}{4} = \frac{-1\downarrow}{4\rightarrow}$



Chapter 2.3 continued

Graph the line that satisfies each set of conditions.

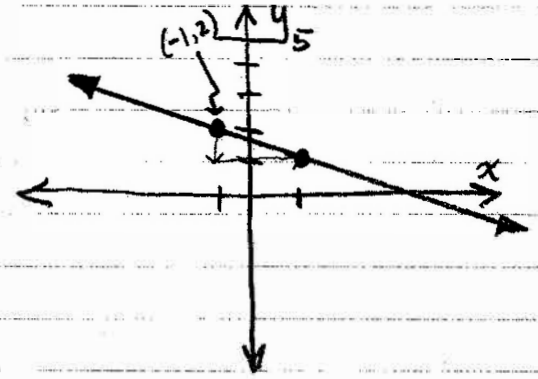
(27) passes through $(-1, 2)$, perpendicular to a line whose slope is $\frac{1}{2}$.

perpendicular lines have slopes that are "opposite reciprocals"... their product is -1.

if slope $= \frac{1}{2}$ for a line perpendicular,

the slope of the line we are graphing is $-\frac{2}{1} = -2$.

point: $(-1, 2)$
slope: $m = -2$



Chapter 2.3 continued

(28) passes through $(-1,2)$, parallel to the graph of $x-3y=14$

↳ parallel lines have the SAME slope

Find the slope of the graph

$x-3y=14$

Find 2 points...

let $y=0 \Rightarrow x-3(0)=14$

$x-0=14$

$x=14$

$(14,0)$ ← There's one point; find another

let $y=1 \Rightarrow x-3(1)=14$

$x-3=14$

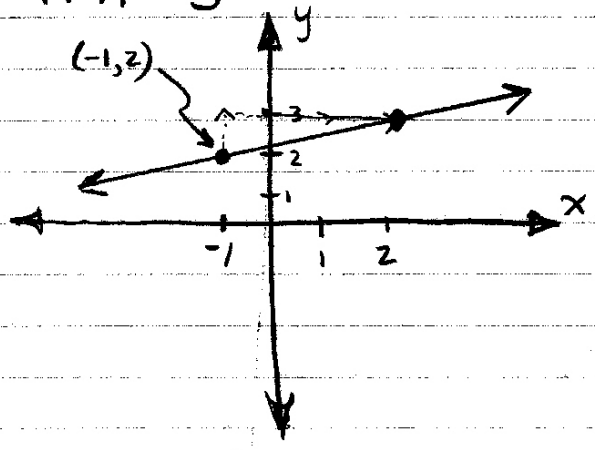
$+3 \quad +3$

$x=17$

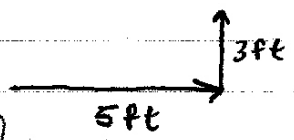
2nd point $(17,1)$

Find slope

$$m=\frac{y_2-y_1}{x_2-x_1}=\frac{1-0}{17-14}=\frac{1}{3}$$



(29) Jack measures his bicycle ramp and finds that it is 5 feet long and 3 feet high. What is the slope of his ramp?



$$\text{slope}=\frac{\text{rise}}{\text{run}}=\boxed{\frac{3}{5}}$$

Assignment 2.3
Slope

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

(-6, -3), (6, 7)

slope = m = $\frac{y_2 - y_1}{x_2 - x_1}$ (-6, -3) , (6, 7)
x_1, y_1 , x_2, y_2

$m = \frac{7-(-3)}{6-(-6)} = \frac{7+3}{6+6} = \frac{10}{12}$

$m = \frac{10}{12} = \frac{\square}{\square}$

7 + 3 = 10

6 + 6 = 12

10 ÷ 2 = ☐

12 ÷ 2 = ☐

A) 5
B) 20

A) 24
B) 6

(5.5, -5.5), (11, -7)

slope = m = $\frac{y_2 - y_1}{x_2 - x_1}$ (5.5, -5.5) , (11, -7)
x_1, y_1 x_2, y_2

$m = \frac{-7-(-5.5)}{11-5.5} = \frac{-7+5.5}{11-5.5} = \frac{\square}{\square}$

$m = \frac{\square}{\square}$

-7 + 5.5 = ☐

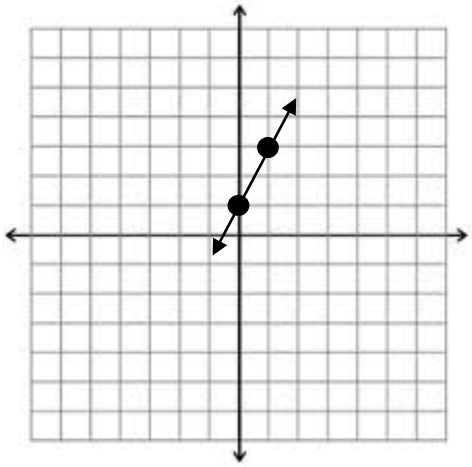
11 - 5.5 = ☐

A) -6.5
B) 6.5

A) 25
B) 16.5

Graph the line passing through the given point with the given slope.

(0, 1), m = 2



m = rise / run

m = 2 = 2/1

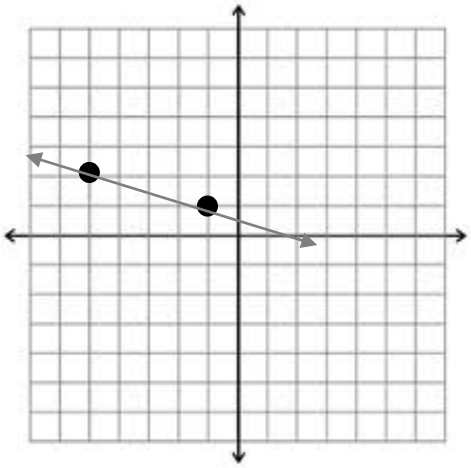
Is this graph correct?

Yes

No

Assignment 2.3
Slope

(-5, 2), m = $-\frac{1}{4}$



m = rise / run

m = -1 / 4

Is this graph correct?

Yes

No

Graph the line that satisfies each set of conditions.

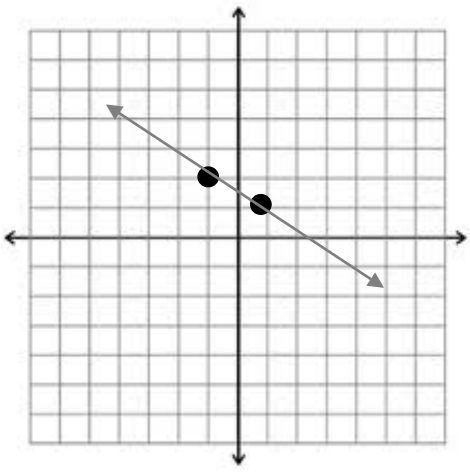
passes through (-1, 2), perpendicular to a line whose slope is ½

perpendicular lines have slopes that are "opposite reciprocals" their product is -1.

If slope = ½ for a line perpendicular, the slope of the line we are graphing is -2/1 = -2

Point: (-1, 2)

Slope: m = -2



Is this graph correct?

Yes

No

Choice Strategy

Assignment 2.3
Slope

passes through (-1, 2), parallel to the graph of x – 3y = 14

find the slope of the graph x -3y = 14
find 2 points…
let y = 0 ⇨ x – 3(0) = 14
x + ☐ = 14
x = 14

-3 ● 0 = ☐ → A) 3 B) 0

(14,0) ⇦ there's one point, find another

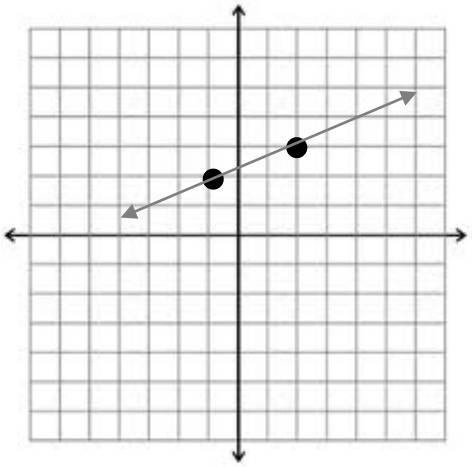
Let y = 1 ⇨ x – 3(1) = 14
x - 3 = 14
+ 3 +3
x = ☐

14 + 3 = ☐ → A) 16 B) 17

2nd point (☐ , 0)

Find slope:
slope = m = $\frac{y_2 - y_1}{x_2 - x_1} = \frac{1-0}{17-14} = \frac{\square}{\square}$

1 – 0 = ☐ → A) 0 B) 1
17 – 14 = ☐ → A) 3 B) 31



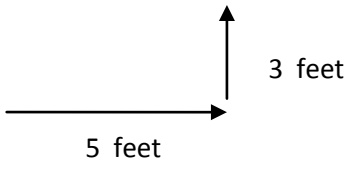
Is this graph correct?

Yes

No

RAMPS
Jack measures his bicycle ramp and finds that it is 5 feet long and 3 feet high. What is the slope of his ramp?

slope = $\frac{rise}{run} = \frac{3}{5}$



Is this answer correct?

Yes

No

Assignment 2.3
Slope

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

(-6, -3), (6, 7)

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

(-6, -3) , (6, 7)
x_1, y_1 , x_2, y_2

$m = \frac{7-(-3)}{6-(-6)} = \frac{7+3}{6+6} = \frac{\square}{\square}$

$m = \frac{\square}{\square} = \frac{\square}{\square}$

7 + 3 = ☐
6 + 6 = ☐
☐ ÷ 2 = ☐
☐ ÷ 2 = ☐

(5.5, -5.5), (11, -7)

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

(5.5, -5.5) , (11, -7)
x_1, y_1 x_2, y_2

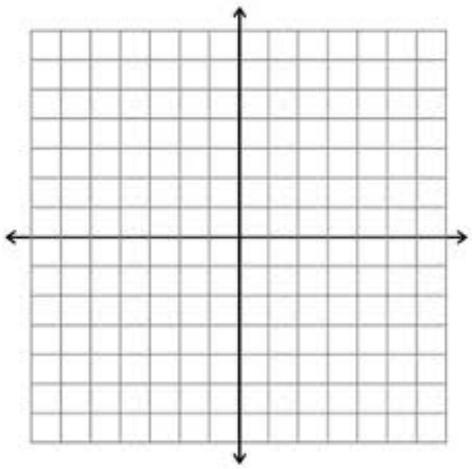
$m = \frac{-7-(-5.5)}{11-5.5} = \frac{-7+5.5}{11-5.5} = \frac{\square}{\square}$

$m = \frac{\square}{\square}$

-7 + 5.5 = ☐
11 - 5.5 = ☐

Graph the line passing through the given point with the given slope.

(0, 1), m = 2

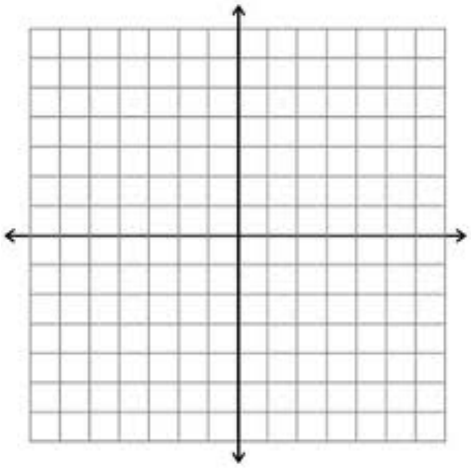


m = $\frac{\text{rise}}{\text{run}}$

m = 2 = $\frac{2}{1}$

Assignment 2.3
Slope

(-5, 2), m = $-\frac{1}{4}$



m = rise / run

m = -1 ↓ / 4 →

Graph the line that satisfies each set of conditions.

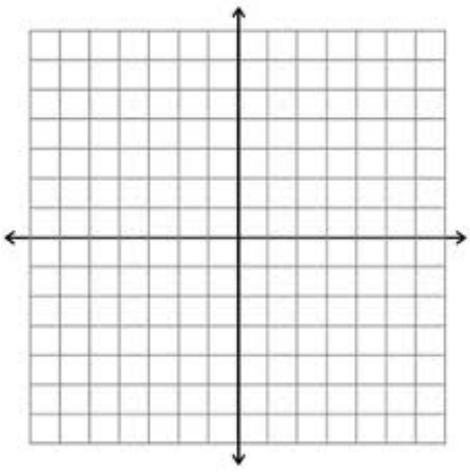
passes through (-1, 2), perpendicular to a line whose slope is ½

perpendicular lines have slopes that are "opposite reciprocals" their product is -1.

If slope = ½ for a line perpendicular, the slope of the line we are graphing is -2/1 = -2

Point: (-1, 2)

Slope: m = -2



Closed Strategy

Assignment 2.3
Slope

passes through (-1, 2), parallel to the graph of x – 3y = 14

find the slope of the graph x -3y = 14
find 2 points…
let y = 0 ⇨ x – 3(0) = 14
x + ☐ = 14
x = 14

-3 ● 0 = ☐

(14,0) ⇦ there's one point, find another

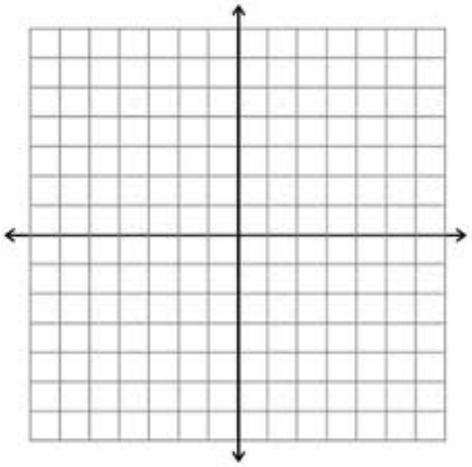
Let y = 1 ⇨ x – 3(1) = 14
x ☐ = 14
+ 3 +3
x = ☐

-3 ● 1 = ☐

14 + 3 = ☐

2nd point (☐ , 0)

Find slope:
slope = m = $\frac{y_2 - y_1}{x_2 - x_1} = \frac{1-0}{17-14} = \frac{\square}{\square}$

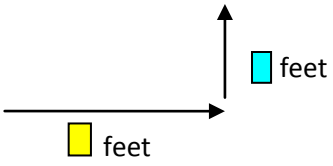


1 – 0 = ☐

17 – 14 = ☐

RAMPS
Jack measures his bicycle ramp and finds that it is 5 feet long and 3 feet high. What is the slope of his ramp?

slope = $\frac{rise}{run} = \frac{\square}{\square}$



Assignment 2.3
Slope

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

(-6, -3), (6, 7)

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

(-6, -3) , (6, 7)
x_1, y_1 , x_2, y_2

$m = \frac{7-(-3)}{6-(-6)} = \frac{7+3}{6+6} = \frac{10}{12}$

$m = \frac{10}{12} = \frac{\square}{\square}$

7 + 3 = 10

6 + 6 = 12

10 ÷ 2 = ☐

12 ÷ 2 = ☐

(5.5, -5.5), (11, -7)

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

(5.5, -5.5) , (11, -7)
x_1, y_1 x_2, y_2

$m = \frac{-7-(-5.5)}{11-5.5} = \frac{-7+5.5}{11-5.5} = \frac{\square}{\square}$

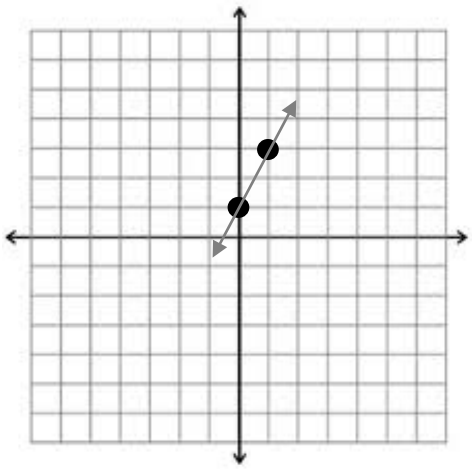
$m = \frac{\square}{\square}$

-7 + 5.5 = ☐

11 - 5.5 = ☐

Graph the line passing through the given point with the given slope.

(0, 1), m = 2

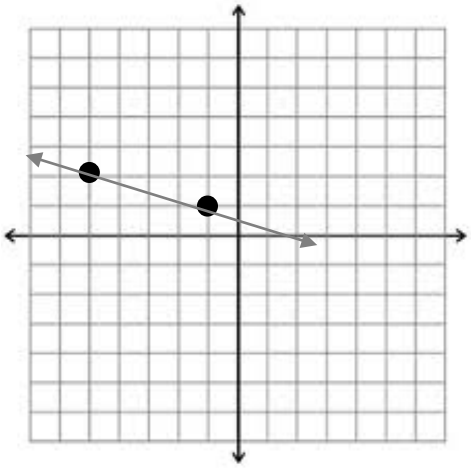


m = $\frac{\text{rise}}{\text{run}}$

m = 2 = $\frac{2}{1}$

Assignment 2.3
Slope

(-5, 2), m = $-\frac{1}{4}$



m = rise
run

m = -1
4

Graph the line that satisfies each set of conditions.

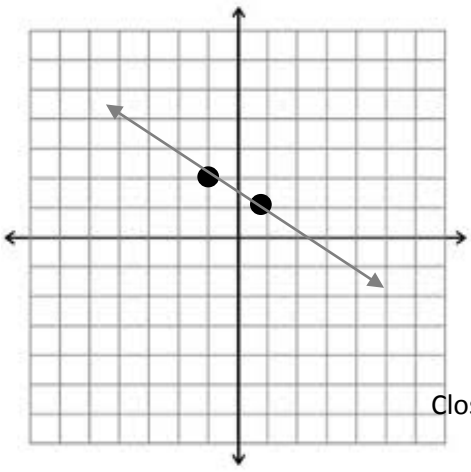
passes through (-1, 2), perpendicular to a line whose slope is ½

perpendicular lines have slopes that are "opposite reciprocals" their product is -1.

If slope = ½ for a line perpendicular, the slope of the line we are graphing is -2/1 = -2

Point: (-1, 2)

Slope: m = -2



Closed Last Step Strategy

Assignment 2.3
Slope

passes through (-1, 2), parallel to the graph of x – 3y = 14

find the slope of the graph x -3y = 14
find 2 points…
let y = 0 ⇨ x – 3(0) = 14
x + ☐ = 14
x = 14

-3 ● 0 = ☐

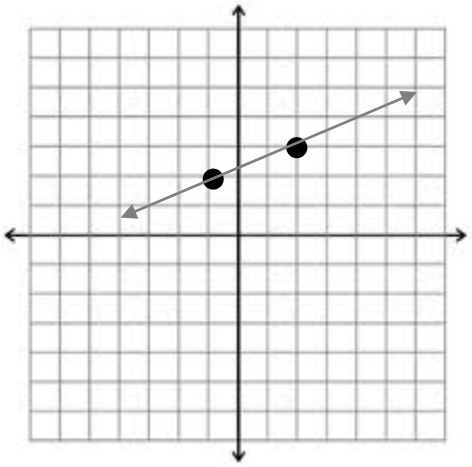
(14,0) ⇦ there's one point, find another

Let y = 1 ⇨ x – 3(1) = 14
x - 3 = 14
+ 3 +3
x = ☐

14 + 3 = ☐

2nd point (☐ , 0)

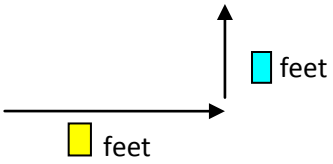
Find slope:
slope = m = $\frac{y_2 - y_1}{x_2 - x_1} = \frac{1 - 0}{17-14} = \frac{\square}{\square}$



1 – 0 = ☐
17 – 14 = ☐

RAMPS
Jack measures his bicycle ramp and finds that it is 5 feet long and 3 feet high. What is the slope of his ramp?

slope = $\frac{rise}{run} = \frac{\square}{\square}$



Assignment 2.3
Slope

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

(-6, -3), (6, 7)

(5.5, -5.5), (11, -7)

Graph the line passing through the given point with the given slope.

(0, 1), m = 2

(-5, 2), m = $-\frac{1}{4}$

Graph the line that satisfies each set of conditions.

passes through (-1, 2), perpendicular to a line whose slope is ½

passes through (-1, 2), parallel to the graph of x – 3y = 14

RAMPS
Jack measures his bicycle ramp and finds that it is 5 feet long and 3 feet high. What is the slope of his ramp?

Open-Ended

Assignment 2.3
Slope

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

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

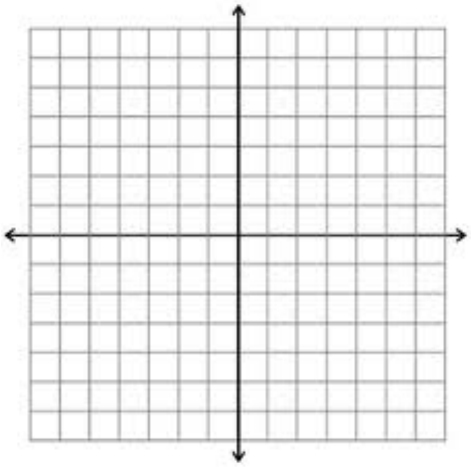
(-6, -3), (6, 7)

(5.5, -5.5), (11, -7)

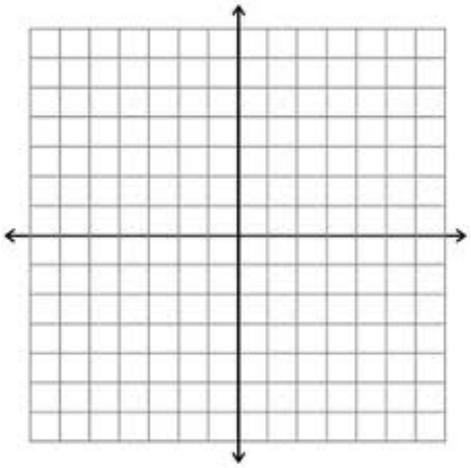
Graph the line passing through the given point with the given slope.

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

(0, 1), m = 2



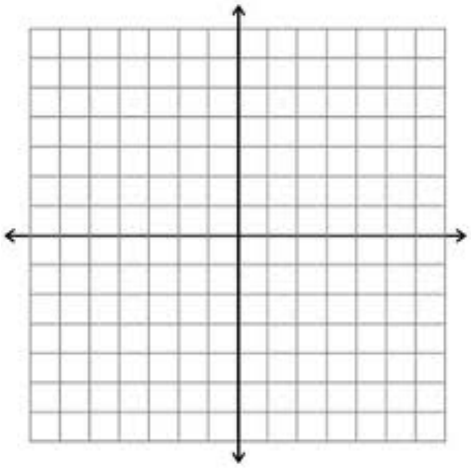
(-5, 2), m = $\frac{1}{4}$



Assignment 2.3
Slope

Graph the line that satisfies each set of conditions.

passes through (-1, 2), perpendicular to a line whose slope is ½



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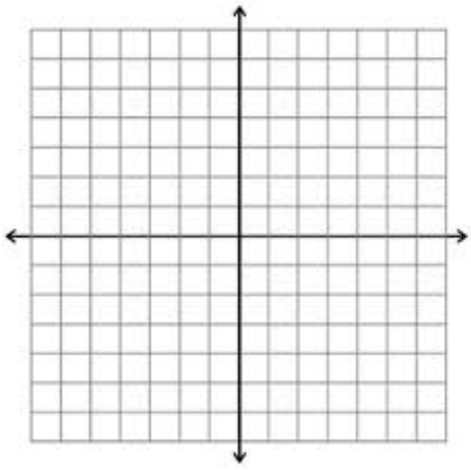
passes through (-1, 2), parallel to the graph of x – 3y = 14



RAMPS

Jack measures his bicycle ramp and finds that it is 5 feet long and 3 feet high. What is the slope of his ramp?

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