

6.1 \Rightarrow slope formula

6.2 \Rightarrow parallel & perpendicular lines

6.3 \Rightarrow omit

6.4: Slope-Intercept form of the line.

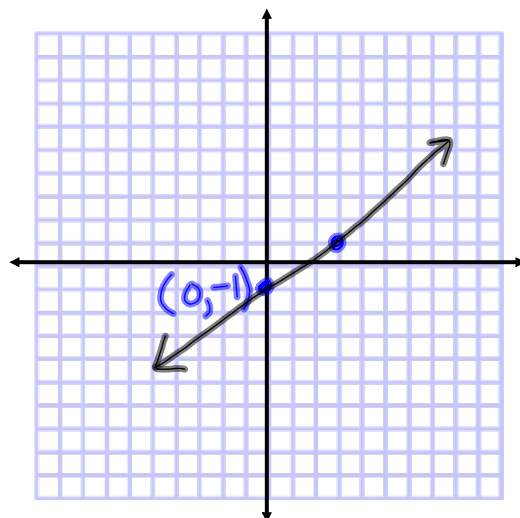
$$y = mx + b$$

\uparrow \uparrow
 Slope y-intercept

Graphing lines in the form $y = mx + b$

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

slope = $\frac{2}{3}$ y-intercept = -1

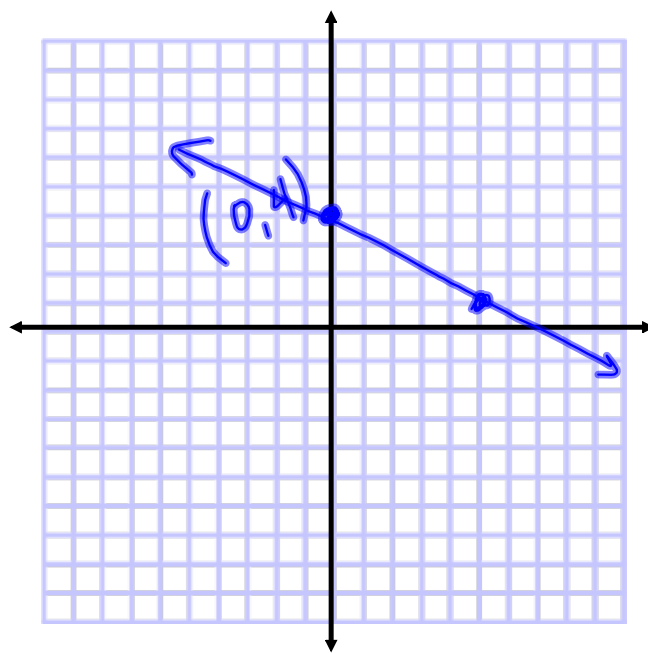


Start at
y-intercept
(0, -1)

Use slope
 $\frac{2}{3} \rightarrow \frac{\text{rise}}{\text{run}}$

from -1, move
up 2, over 3

ex.2) $y = -\frac{3}{5}x + 4$



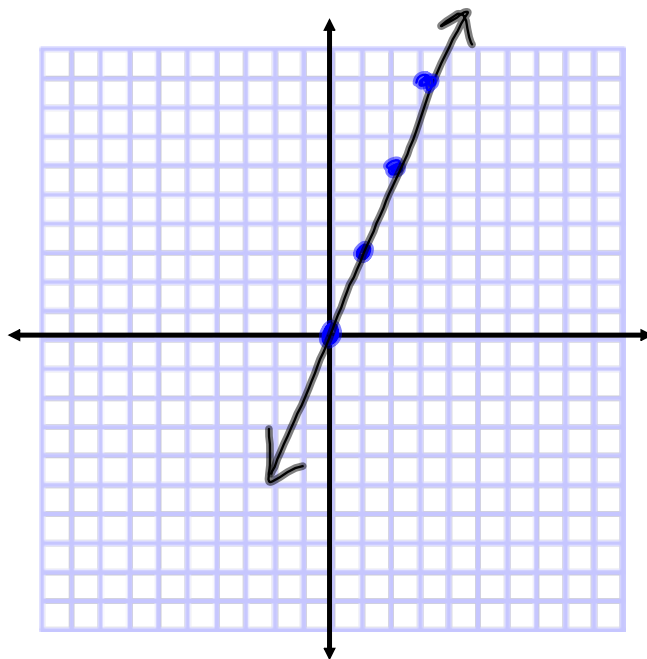
Start on
y-axis

$-\frac{3}{5} \rightarrow$ down 3
over 5

3) $y = 3x$

y-intercept = 0

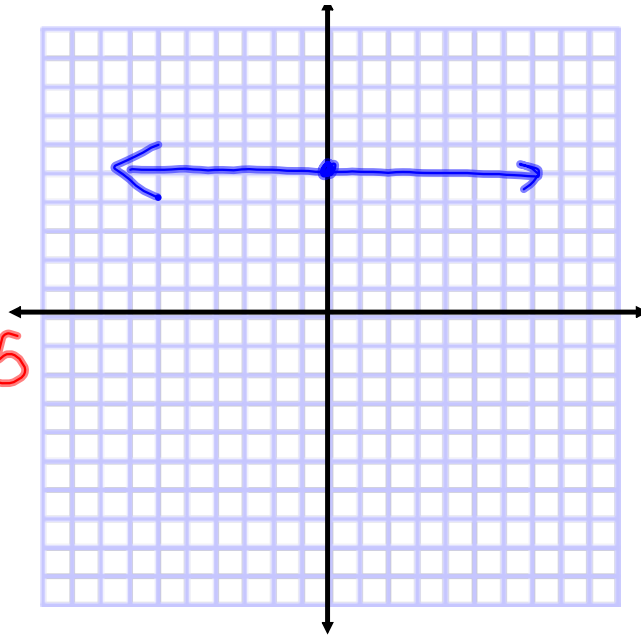
Slope = $\frac{3}{1}$



$$4) y = 5$$

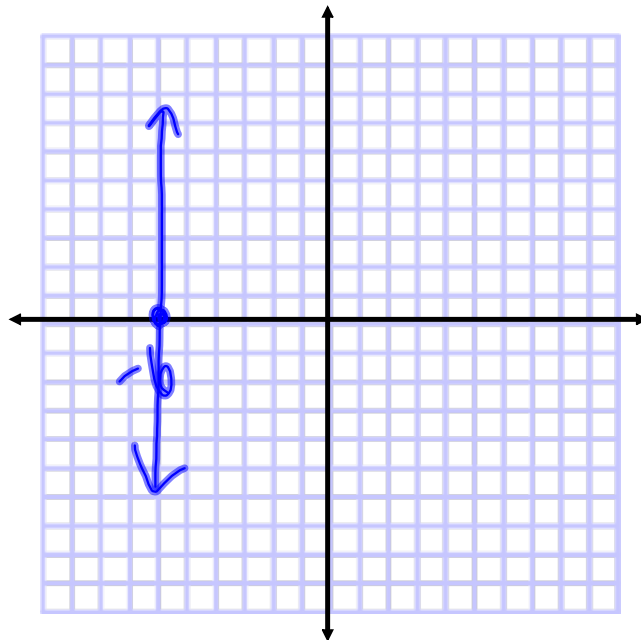
Slope = 0

y-intercept = 5



$$5) x = -6$$

Slope is
undefined



* Slope of 0 (horizontal line)
and slope undefined (vertical line)
are perpendicular.

$$\frac{0}{n} \perp \frac{n}{0}$$

Other common questions;

1. Write the equation of a line with a slope of $-\frac{1}{2}$ and y-intercept of 7

$$y = -\frac{1}{2}x + 7$$

2. What is the slope of a line parallel to $y = \frac{5}{3}x - 1$?

↳ same slope $\Rightarrow \frac{5}{3}$

3. Write the equation of a line perpendicular to $y = 4x + 3$, with a y-intercept of 9.

perpendicular
slope $-\frac{1}{4}$

$$y = -\frac{1}{4}x + 9$$

Practice pg 362

4a, 5a, c, e

6a, b, c

11, 17, 18, 21