

3.4 Graphing Linear Functions

A linear equation can be graphed using: a point and the slope
 $\swarrow$
 y-intercept

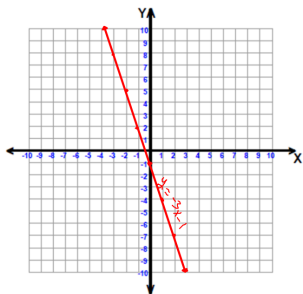
Slope Intercept Form of a line: $y = m \cdot x + b$
 $\swarrow$ $\nwarrow$
 slope (m) y-intercept (b)
 $(0, b)$
 $(0, \#)$

Examples: Find the slope and y-intercept.

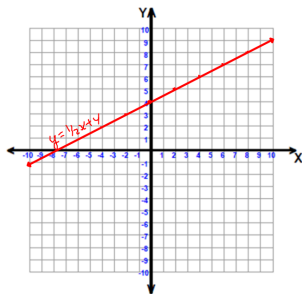
- | | | |
|---|---|--|
| 1. $y = 2x - 6$
$m = 2$
$b = -6$
(y-intercept) | 2. $y = -2x + 3$
$m = -2$
$b = 3$
(y-intercept) | 3. $y = \frac{3}{5}x + 7$
$m = \frac{3}{5}$
$b = 7$
(y-intercept) |
| 4. $y = -3x$
$m = -3$
$b = 0$
(y-intercept) | 5. $y = -\frac{7}{4}x - 3$
$m = -\frac{7}{4}$
$b = -3$
(y-intercept) | 6. $y = \frac{3}{4}x + \frac{1}{2}$
$m = \frac{3}{4}$
$b = \frac{1}{2}$
(y-intercept) |

Examples: Graph.

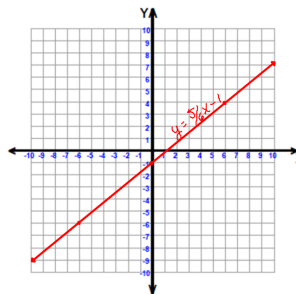
1. $y = -3x - 1$
 $m = \frac{-3}{1} \downarrow$
 $b = -1$ (0, -1)



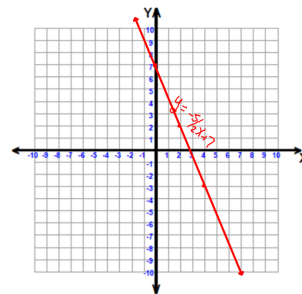
2. $y = \frac{1}{2}x + 4$
 $m = \frac{1}{2} \nearrow$
 $b = 4$ (0, 4)



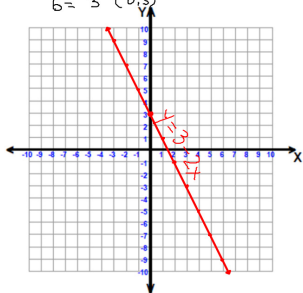
3. $y = \frac{5}{6}x - 1$
 $m = \frac{5}{6} \nearrow$
 $b = -1$ (0, -1)



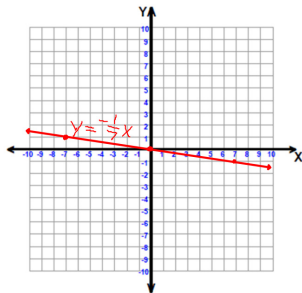
4. $y = -\frac{5}{2}x + 7$
 $m = \frac{-5}{2} \downarrow$
 $b = 7$ (0, 7)



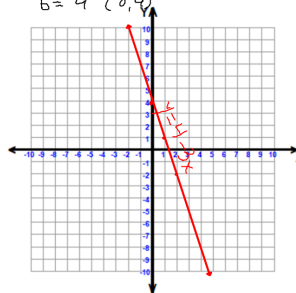
5. $y = 3 - 2x$
 $y = -2x + 3$
 $m = \frac{-2}{1} \downarrow$
 $b = 3$ (0, 3)



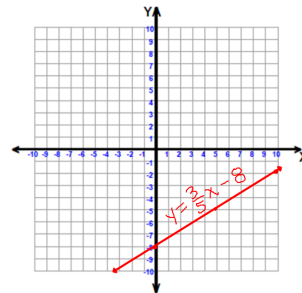
6. $y = -\frac{1}{5}x$
 $m = \frac{-1}{5} \downarrow$
 $b = 0$ (0, 0)



7. $y = 4 - 3x$
 $y = -3x + 4$
 $m = \frac{-3}{1} \downarrow$
 $b = 4$ (0, 4)



8. $y = \frac{3}{5}x - 8$
 $m = \frac{3}{5} \nearrow$
 $b = -8$ (0, -8)



HOMEWORK

Worksheet - HW 3.4