Name Key
Date

How Do We Write An Equation In Slope-Intercept Form?

$$y = mx + b$$

m = slope, b = y-int

move the x-variable 1st always (when needed)

1) Write the slope-intercept form of the equation of each line.

(a) $x + y = 10$

$-x \quad -x$

$y = -x + 10$

$m = -1$

$b = 10$

(b) $5x + y = 25$

$-5x \quad -5x$

$y = -5x + 25$

$m = -5$

$b = 25$

(c) $2y - 8x = 14$

$+8x \quad +8x$

$\frac{2y}{2} = \frac{8x}{2} + \frac{14}{2}$

$y = 4x + 7$

$m = 4$

$b = 7$

(d) $2y - 3x = -16$

$+3x \quad +3x$

$\frac{2y}{2} = \frac{3x}{2} - \frac{16}{2}$

$y = \frac{3}{2}x - 8$

$m = \frac{3}{2}$

$b = -8$

(e) $9x - 7y = -7$

$-9x \quad -9x$

$\frac{-7y}{-7} = \frac{-9x}{-7} - \frac{7}{-7}$

$y = \frac{9}{7}x + 1$

$m = \frac{9}{7}$

$B = 1$

can't have 2 negatives

(f) $x - 3y = 6$

$-x \quad -x$

$\frac{-3y}{-3} = \frac{-1x}{-3} + \frac{6}{-3}$

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

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

$b = -2$

(g) $6x + 5y = -15$

$-6x \quad -6x$

$\frac{5y}{5} = \frac{-6x}{5} - \frac{15}{5}$

$y = -\frac{6}{5}x - 3$

$m = -\frac{6}{5}$

$b = -3$

(h) $4x - y = 1$

$-4x \quad -4x$

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

$y = 4x - 1$

$m = 4$

$B = -1$

2) Find the slope and y-intercept of each line.

(a) $y = -\frac{5}{2}x - 5$

$m = -\frac{5}{2}$

$b = -5$

(b) $x + 2y = -8$

$-x \quad -x$

$\frac{2y}{2} = \frac{-1x}{2} - \frac{8}{2}$

$y = -\frac{1}{2}x - 4$

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

$B = -4$

(c) $4x - 3y = 9$

$-4x \quad -4x$

$\frac{-3y}{-3} = \frac{-4x}{-3} + \frac{9}{-3}$

$y = \frac{4}{3}x - 3$

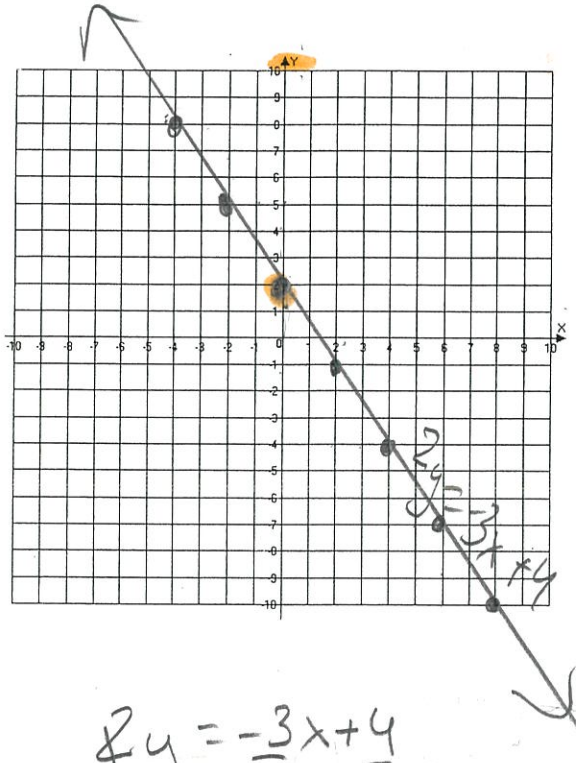
$m = \frac{4}{3}$

$b = -3$

3) **Rewrite the following equations in slope-intercept form first. THEN graph the equations using the slope and the y-intercept.**

* You MUST write the original equation on the line ✍

(a) $2y = -3x + 4$



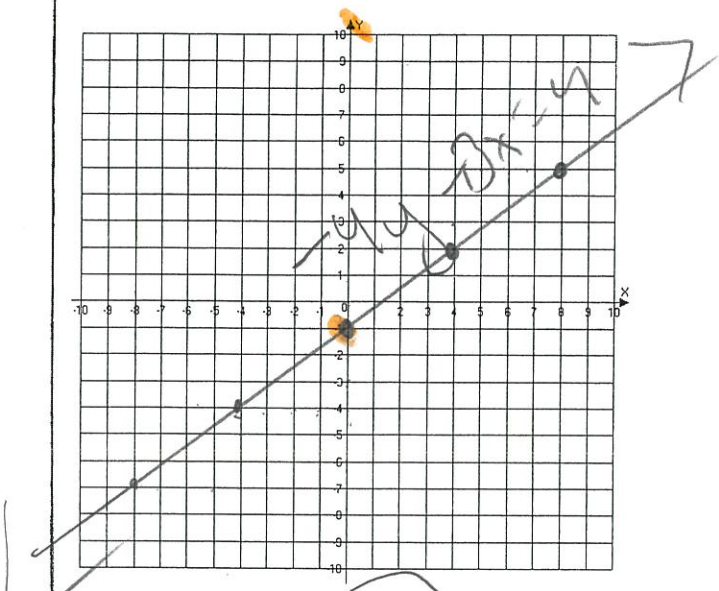
$\frac{2}{2}y = \frac{-3}{2}x + \frac{4}{2}$

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

$m = -\frac{3}{2}$ ↓ 2 →

$b = 2$

(b) $-4y + 3x = 4$



$-4y + 3x = 4$

$-3x \quad -3x$

$\frac{-4y}{-4} = \frac{-3x}{-4} + \frac{4}{-4}$

$y = \frac{3}{4}x - 1$

$m = \frac{3}{4}$ ↑ 4 →

$b = -1$