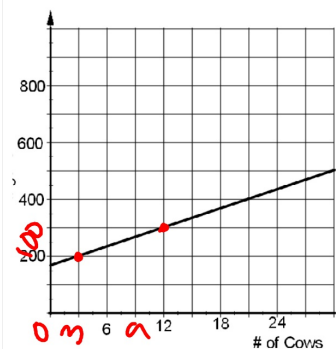


1. a. Rate of Change =

Gallons	Miles
3	127
5	211
8	337
12	505

$$\frac{211 - 127}{5 - 3} = \frac{84}{2} = 42 \frac{\text{mi}}{\text{gal}}$$

b. Rate of Change =



$$\frac{100}{9} \frac{\text{gal}}{\text{LOW}}$$

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

a) $(-8, 13)$ & $(-8, -12)$

$$m = \frac{0}{0} \text{ undef.}$$

b) $(\frac{1}{6}, 3)$ & $(\frac{8}{6}, 12)$

$$m = \frac{12 - 3}{\frac{8}{6} - \frac{1}{6}} = \frac{9}{\frac{7}{6}} = \frac{9}{1} \cdot \frac{6}{7} = \frac{54}{7}$$

Point - Slope Form of a Linear Equation:

Definition Point-Slope Form of a Linear Equation

The **point-slope form** of the equation of a nonvertical line that passes through the point (x_1, y_1) with slope m is

$$y - y_1 = m(x - x_1)$$

3. A line passes through these two points: $(4, -3)$ & $(-2, 9)$

a) Find the slope of this line.

$$m = \frac{9 - (-3)}{-2 - 4} = \frac{12}{-6} = -2$$

b) Write the equation of the line in Point-Slope Form

$$\begin{aligned} y + 3 &= -2(x - 4) & (4, -3) \\ y + 3 &= -2x + 8 \\ y &= -2x + 5 \\ y - 9 &= -2(x + 2) & (-2, 9) \end{aligned}$$

Sec 6-2: Slope-Intercept Form for the equation of a line.

$$y = mx + b$$

slope \rightarrow m \rightarrow b Y-intercept

Writing the equation of a line in Slope-Intercept Form:

1. Write the equation of the line that passes through each pair points. Give your answer in Slope-Intercept Form

a) $(-6, 14)$ & $(3, 8)$

Method 1:

First: Find the slope. $m = \frac{14 - 8}{-6 - 3} = \frac{6}{-9} = -\frac{2}{3}$

Second: Write the equation in Point-Slope Form

Using $(3, 8)$ $y - 8 = -\frac{2}{3}(x - 3)$

Third: Change Point-Slope into Slope-Intercept

Distribute the slope: $y - 8 = -\frac{2}{3}x + 2$

Add 8 to both sides: $y = -\frac{2}{3}x + 10$

Method 2: a) $(-6, 14)$ & $(3, 8)$

First: Find the slope. The same as previous: $m = -\frac{2}{3}$

Second: Replace m in $y = mx + b$ with the slope

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

Third: Replace y and x with the coordinates of one of the points Using $(3, 8)$ $8 = -\frac{2}{3}(3) + b$

Fourth: Solve for b .

First simplify $8 = -2 + b$ $b = 10$
add 2 to both sides $+2$ $+2$

Fifth: Rewrite $y = mx + b$ with the values of m and b you've found.

$$y = -\frac{2}{3}x + 10$$

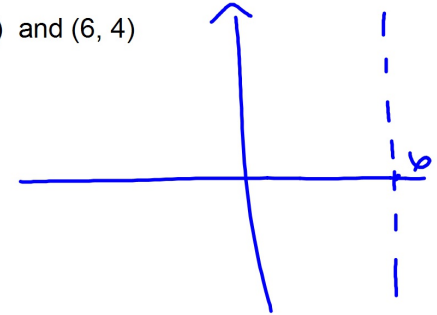
1.) Write the equation of the line in Slope-Intercept Form that passes through this pair of points:

① $m = 0$ ② $y - 5 = 0(x - 4)$
 $y - 5 = 0$
 $y = 5$

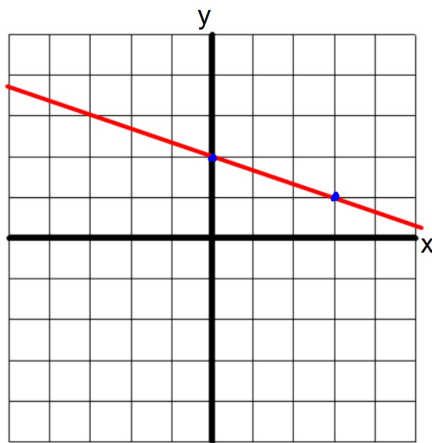
2.) Write the equation of the line in Slope-Intercept Form that passes through this pair of points:

$x = 6$

(6, 2) and (6, 4)

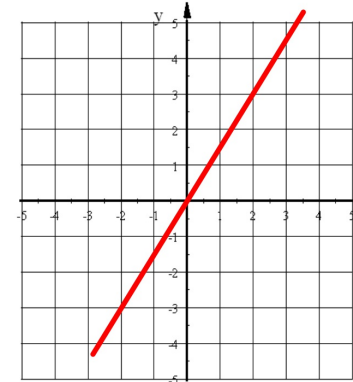


Write the equation of this line in Slope-Intercept Form:



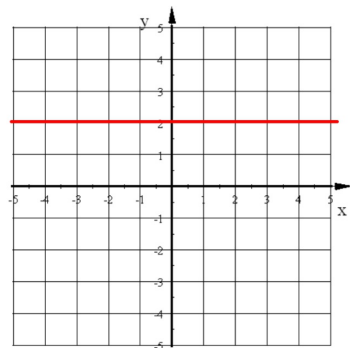
$m = -\frac{1}{3}$
 $b = 2$
 $y = -\frac{1}{3}x + 2$

Write the equation of this line in Slope-Intercept Form:



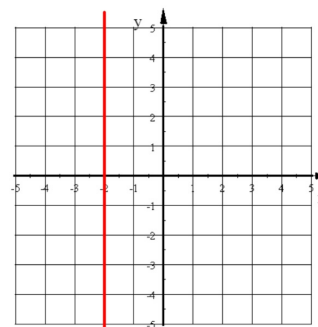
$y = \frac{3}{2}x$

Write the equation of this line in Slope-Intercept Form



$$y = 2$$

Write the equation of this line.



Slope-Intercept Form:

Can't be written in this form

$$x = -2$$

Point-Slope Form:

Can't be written in this form

Find the y-intercept and x-intercept of this line:

$$y = 2x + 3$$

$$y = 0$$

$$0 = 2x + 3$$

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

$$y = 3$$

Find the slope and y-intercept of each line.

$$\begin{aligned} 1. \quad m &= -2 \quad b = -12 \\ y - 4 &= -2(x + 8) \\ y - 4 &= -2x - 16 \\ y &= -2x - 12 \end{aligned}$$

$$\begin{aligned} 2. \quad m &= 1/3 \\ 3x - 9y &= 18 \\ -3x - 9y &= -3x + 18 \\ -9y &= -3x + 18 \\ y &= \frac{1}{3}x - 2 \\ b &= -2 \end{aligned}$$

Write an equation to model each situation.

1. You have 75 songs on your i-pod right now and plan to download 4 more each week.

Slope-Intercept Form $T = 4w + 75$ $w = \# \text{ of weeks}$
T = Total # of songs after
w weeks.

2. At the ballgame you bought 3 hot dogs and 4 Cokes for \$25.25

Standard Form $3H + 4C = 25.25$ $H = \# \text{ of hot dogs}$
C = # of Cokes

Classwork: Practice 6.4 Worksheet & Practice 6.2 Worksheet

Skip #29-36 (practice 6.4)

IXL #14 - S.2 & S.3 due today at 6pm!