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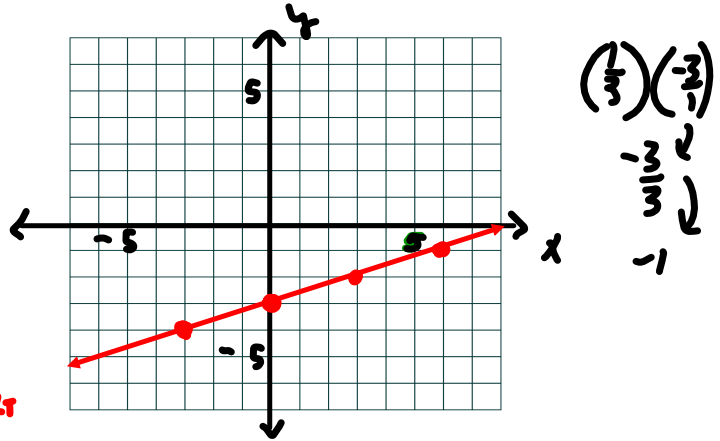
CW # 2-2: Algebra 1 - Sections 5-1 to 5-6

20 points

1. Write an equation in **slope-intercept form**. Graph the equation.

$(3, -2)$; slope $\frac{1}{3}$
 $y - y_c = m(x - x_c)$
 $y - (-2) = \frac{1}{3}(x - 3)$
 $y + 2 = \frac{1}{3}x - \frac{1}{3}$
 $y = \frac{1}{3}x - 3$

$\frac{up\ 1}{R+3}$ or $\frac{dn\ 1}{L+3}$ START



2. Write an equation in **slope-intercept form**.

$y + 2 = \frac{1}{6}(x - 4)$
 $y + 2 = \frac{1}{6}x - \frac{4}{6}$
 $y + \frac{6}{3} = \frac{1}{6}x - \frac{2}{3}$
 $y = \frac{1}{6}x - \frac{8}{3}$

$y = \frac{1}{6}x - \frac{8}{3}$

* GET a common Denominator

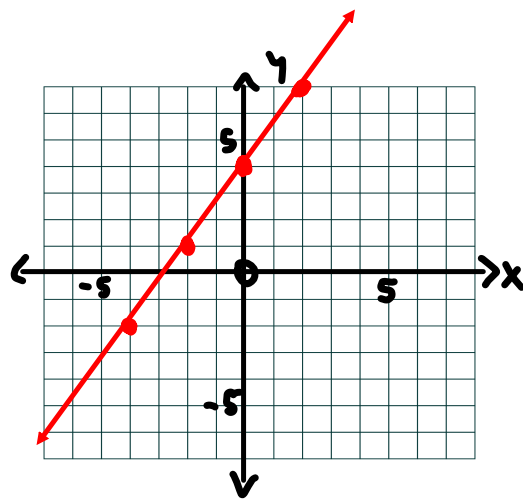
3. Write an equation in **slope - intercept form**.

Sketch the graph of the equation.

$(2, 7), (-2, 1)$
 ① find slope: $m = \frac{7-1}{2-(-2)} = \frac{6}{4} = \frac{3}{2}$

$y - 7 = \frac{3}{2}(x - 2)$
 $y - 7 = \frac{3}{2}x - 3$
 $y = \frac{3}{2}x + 4$

$(\frac{3}{2})(\frac{4}{1}) = \frac{3}{1}$
 $\frac{up\ 3}{R+2}$ or $\frac{dn\ 3}{L+2}$ START



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4. Write the equation in **Standard form**.

$$\begin{aligned} y + 7 &= -\frac{3}{2}(x + 1) \\ y + 7 &= -\frac{3}{2}x - \frac{3}{2} \\ y + \frac{14}{2} &= -\frac{3}{2}x - \frac{3}{2} \\ \cancel{y} + \frac{14}{2} &= -\frac{3}{2}x - \frac{3}{2} \end{aligned}$$
$$\begin{aligned} 2(y) &= \left(-\frac{3}{2}x - \frac{17}{2}\right) \\ 2y &= -\frac{3x}{2} - \frac{17}{2} \\ \underline{+3x} \quad \quad \underline{+3x} & \\ 3x + 2y &= -17 \end{aligned}$$

5. Given the following points:

$(-4, 9), (2, -9)$

a. Write the equation in **point - slope form**.

$x_1 \ y_1 \ x_2 \ y_2$

b. Convert the equation to **slope - intercept form**

a) $m = \frac{-9 - 9}{2 - (-4)} = \frac{-18}{6} = -3$

b) $y + 9 = -3(x - 2)$
 $y + 9 = -3x + 6$
 $\underline{-9} \quad \quad \underline{-9}$
 $y = -3x - 3$

$$\begin{aligned} y - (-9) &= -3(x - 2) \\ \boxed{y + 9} &= -3(x - 2) \end{aligned}$$

6. Write the equation of a line that is **perpendicular** to $y = \frac{3}{4}x + 1$ and goes through the point $(6, 5)$

$x_c \ y_c$

$$m_{\perp} = -\frac{1}{3}$$

$$\begin{aligned} y - y_c &= m(x - x_c) \\ \boxed{y - 5} &= -\frac{1}{3}(x - 6) \end{aligned}$$

or $y - 5 = -\frac{1}{3}x + 2$
 $\underline{+5} \quad \quad \underline{+5}$

or $y = -\frac{1}{3}x + 7$

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8. Find the inverse for each relation.

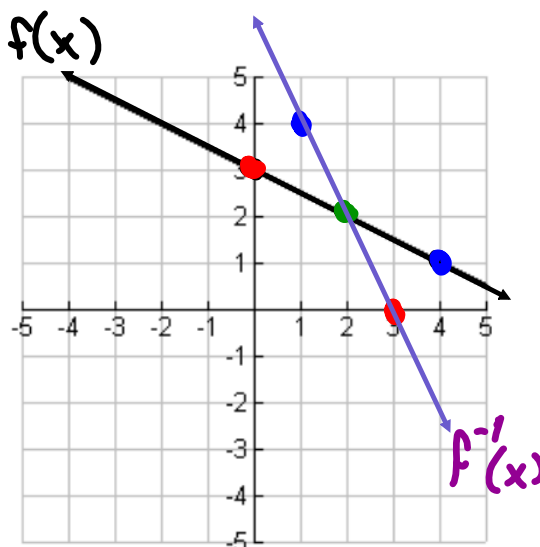
$$\{(1, -3), (-2, 3), (5, 1), (6, 4)\}$$

$$\{(-5, 7), (-6, -8), (1, -2), (10, 3)\}$$

$$\{(-3, 1), (3, -2), (1, 5), (4, 6)\}$$

$$\{(7, -5), (-8, -6), (-2, 1), (3, 10)\}$$

9. Sketch the graph of the inverse for the given function $f(x)$.



10. Given $f(x)$, find $f^{-1}(x)$

$$f(x) = -4x + 8$$

switch x & y

$$x = -4y + 8$$

$$\frac{x-8}{-4} = \frac{-4y}{-4} \rightarrow y = -\frac{1}{4}x + 2$$

$$f^{-1}(x) = -\frac{1}{4}x + 2$$