11-5-13

5ᵗʰ Geo

Slope

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

$$y = \boxed{2}x + \underline{3}$$

slope   y-intercept

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

$y = 1x + 3$
$y = y + 3$
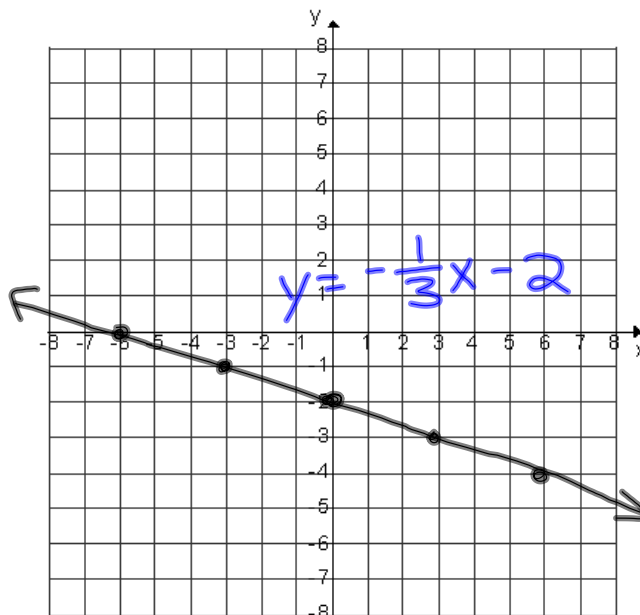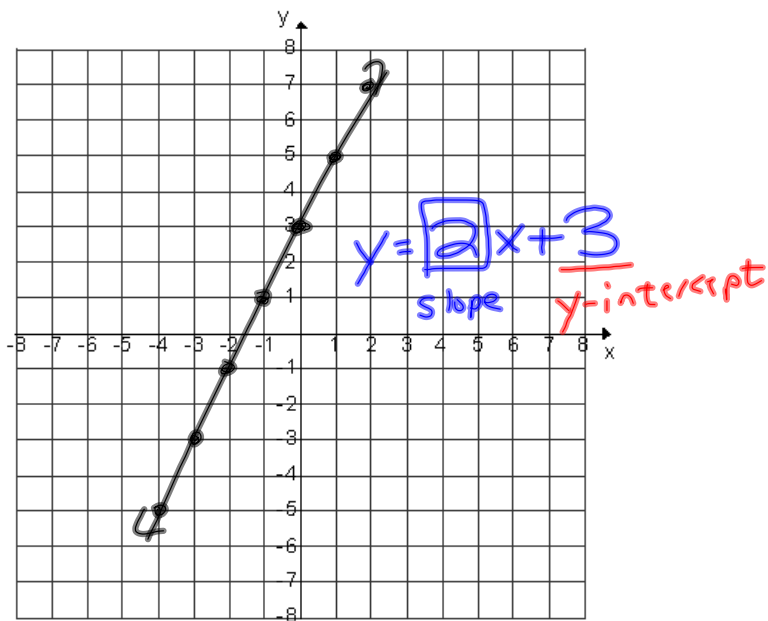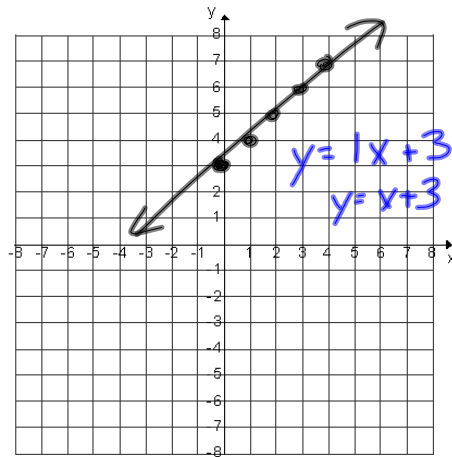
Give equation, in slope intercept form (SIF), that has a slope of ⑤ and goes through (4, 7).

$$y - y_1 = m(x - x_1)$$
$$y - 7 = 5(x - 4)$$
$$y - 7 = 5x - 20$$
$$ + 7 + 7$$
$$y = 5x - 13$$

Give equation in SIF with slope of -4 and goes through (5, 1).

$$y - y_1 = m(x - x_1)$$
$$y - 1 = -4(x - 5)$$
$$y - 1 = -4x + 20$$
$$ + 1 + 1$$
$$y = -4x + 21$$

Give equation in SIF that
goes through $(2,4)$ and $(3,7)$.

$$y - y_1 = \boxed{m}(x - x_1)$$

we must find slope first

$\underline{FIRE}$

$\underline{Rise}$ with the wise $\dfrac{(y)}{}$

AND

$\underline{Run}$ to the $\underline{exit}$ (x)

$$Slope = \frac{\Delta y}{\Delta x} = \frac{7-4}{3-2} = \frac{3}{1} = 3$$

$$y - y_1 = m(x - x_1)$$
$$y - 4 = 3(x - 2)$$
$$y - 4 = 3x - 6$$
$$\underline{+4 \qquad\quad +4}$$
$$y = 3x - 2$$

we used
$(2,4)$ as
our point

Give equation in SIF that
goes through $(2,7)$ and $(4,17)$

$$Slope = \frac{\Delta y}{\Delta x} = \frac{17-7}{4-2} = \frac{10}{2} = 5$$

$$y - y_1 = m(x - x_1)$$
$$y - 7 = 5(x - 2)$$
$$y - 7 = 5x - 10$$
$$\underline{+7 \qquad\quad +7}$$
$$y = 5x - 3$$

Give the equation in SIF
that goes through $(-6, 10)$
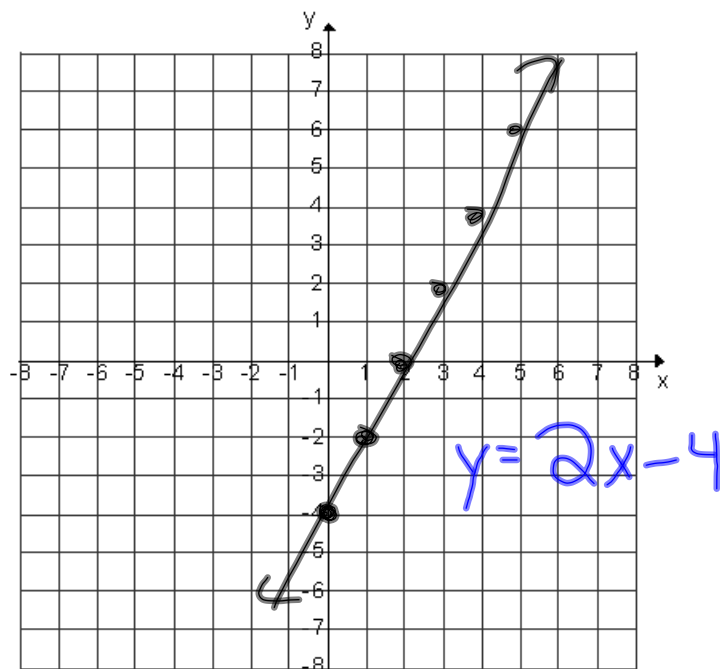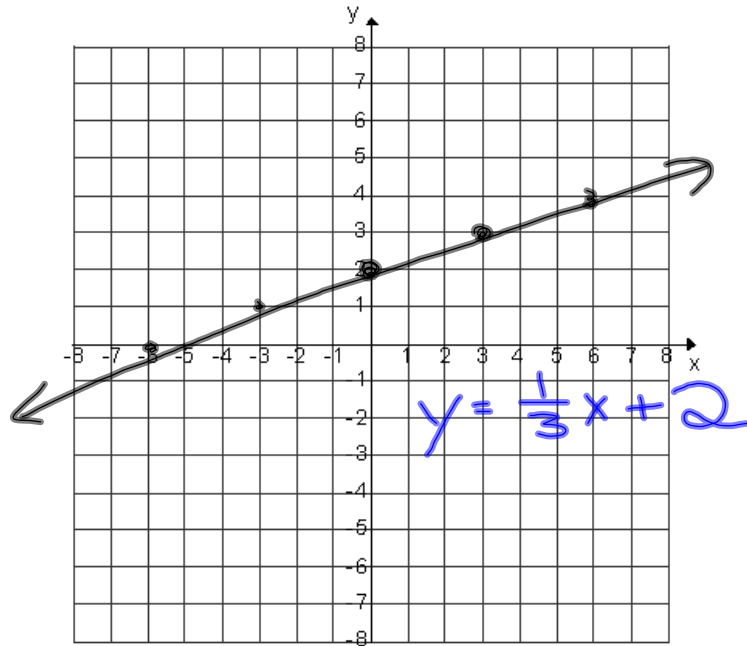and has a slope of -2.
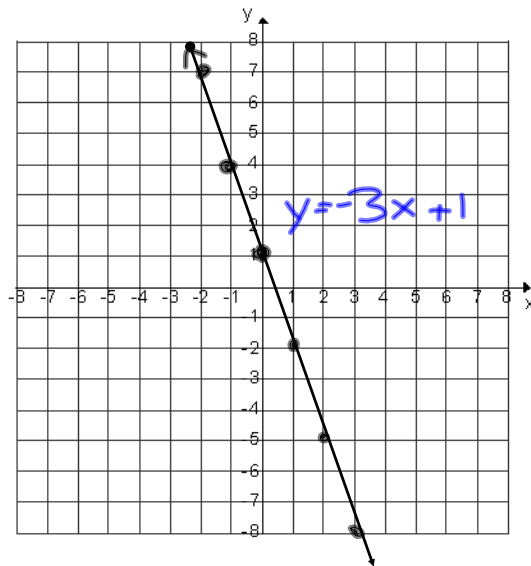
$$y - y_1 = m(x - x_1)$$
$$y - 10 = -2(x + 6)$$
$$y - 10 = -2x - 12$$
$$\underline{+10 \qquad\quad +10}$$
$$y = -2x - 2$$

11-5-13

6ᵗʰ Geo

Slope in real life

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

$y = 2x - 4$

The line is labeled $y = -3x + 1$.

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

Find the equation in slope intercept form (SIF) that goes through $(2, 6)$ and has a slope of 5.
$$x_1 \ y_1$$

$$y - y_1 = m(x - x_1)$$
$$y - 6 = 5(x - 2)$$
$$y - 6 = 5x - 10$$
$$\underline{ +6 \qquad +6}$$
$$y = 5x - 4$$

Give the equation in SIF that has a slope of 2 and goes through $(5, 1)$

$$y - y_1 = m(x - x_1)$$
$$y - 1 = 2(x - 5)$$
$$y - 1 = 2x - 10$$
$$\underline{ +1 \qquad +1}$$
$$y = 2x - 9$$

FIRE

$\underline{\text{Rise}}$ with the wise (y)

AND

$\underline{\text{Run}}$ to the exit (x)

Slope from $(2,6)$ to $(4,20)$

$\text{Slope} = \dfrac{\Delta y}{\Delta x} = \dfrac{20-6}{4-2} = \dfrac{14}{2} = 7$

Give the equation in SIF that goes through $(1,6)$ and $(3,10)$.

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

$\text{Slope} = \dfrac{\Delta y}{\Delta x} = \dfrac{10-6}{3-1} = \dfrac{4}{2} = 2$

$y - 6 = 2(x - 1)$

$\begin{aligned} y - 6 &= 2x - 2 \\ +6 & +6 \end{aligned}$

$y = 2x + 4$

Give the equation in SIF that goes through $(4,10)$ and has a slope of $-\frac{1}{2}$.

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

$y - 10 = -\frac{1}{2}(x - 4)$

$\begin{aligned} y - 10 &= -\frac{1}{2}x + 2 \\ +10 &\phantom{= -\frac{1}{2}x} +10 \end{aligned}$

$y = -\frac{1}{2}x + 12$