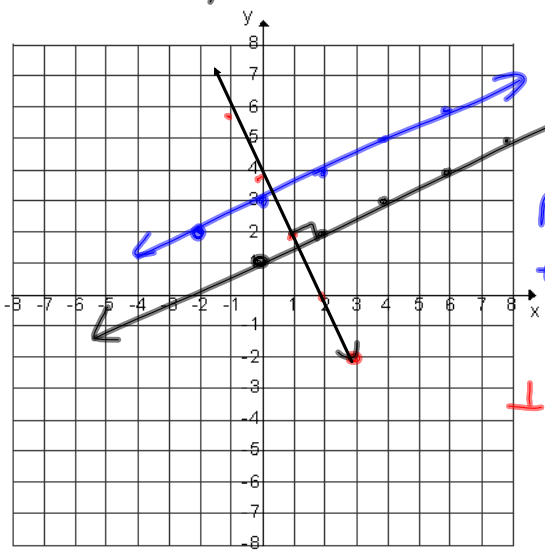
11-6-13
3rd Trig

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



parallel has the same slope

⊥ slope is -2

Give the equation in slope intercept form (SIF) that goes through (2, 7) and has a slope of 4.

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

$y - 7 = 4(x - 2)$

$y - 7 = 4x - 8$

$+7 \quad +7$

$y = 4x - 1$

Give equation in SIF that goes through $(2,-6)$ and has a slope of -4.

$$y - y_1 = m(x - x_1)$$
$$y - -6 = -4(x - 2)$$
$$y + 6 = -4x + 8$$
$$-6 \qquad -6$$
$$y = -4x + 2$$

Give the equation in SIF that goes through $(2,5)$ and $(4,15)$.

$$\text{slope} = \frac{\Delta y}{\Delta x} = \frac{15-5}{4-2} = \frac{10}{2} = 5$$
$$y - y_1 = m(x - x_1)$$
$$y - 15 = 5(x - 4)$$
$$y - 15 = 5x - 20$$
$$+15 \qquad +15$$
$$y = 5x - 5$$

Give the equation in SIF that is parallel to $y = 6x - 1$ and goes through $(2,1)$.

$$y - y_1 = m(x - x_1)$$
$$y - 1 = 6(x - 2)$$
$$y - 1 = 6x - 12$$
$$+1 \qquad +1$$
$$y = 6x - 11$$

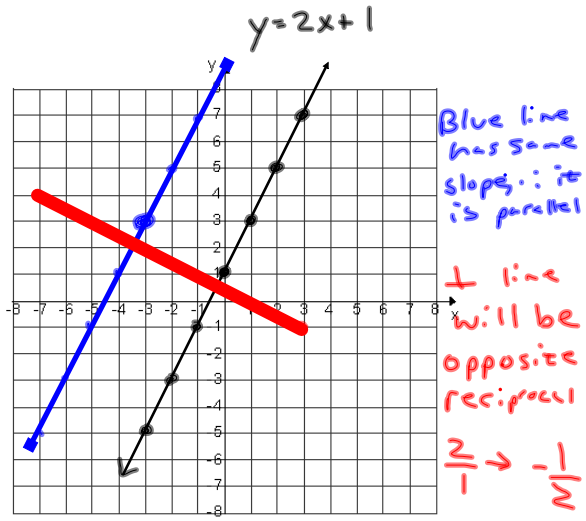
Give the equation in SIF that goes through $(2,4)$ and is perpendicular to $y = \frac{1}{4}x - 7$.

$m = \frac{1}{4}$ $\therefore \perp m = -4$

$$y - y_1 = m(x - x_1)$$
$$y - 4 = -4(x - 2)$$
$$y - 4 = -4x + 8$$
$$+4 \qquad +4$$
$$y = -4x + 12$$

11-6-13

4th Trig



Give the equation in slope intercept form (SIF) that goes through $(\underset{x_1}{1}, \underset{y_1}{7})$ and has a slope of 2.

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

$$y - 7 = 2(x - 1)$$

$$y - 7 = 2x - 2$$

$$+7 \qquad +7$$

$$y = 2x + 5$$

Give the equation in SIF that has a slope of 10 and goes through (2, 7).

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

$$y - 7 = 10(x - 2)$$

$$y - 7 = 10x - 20$$

$$+7 \qquad +7$$

$$y = 10x - 13$$

Give the equation in SIF that goes through (2,7) and (4,13).

$\text{slope} = \frac{\Delta y}{\Delta x} = \frac{13-7}{4-2} = \frac{6}{2} = 3$

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

$y - 7 = 3(x - 2)$

$y - 7 = 3x - 6$

$+7 \qquad +7$

$y = 3x + 1$

Give the equation in SIF that is parallel to $y = 4x - 1$ and goes through (2,10).

$m = 4$

$\therefore$ parallel $m = 4$

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

$y - 10 = 4(x - 2)$

$y - 10 = 4x - 8$

$+10 \qquad +10$

$y = 4x + 2$

Give the equation in SIF that goes through (4,8) and is perpendicular to $y = 2x - 3$.

$m = 2$

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

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

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

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

$+8 \qquad +8$

$y = -\frac{1}{2}x + 10$