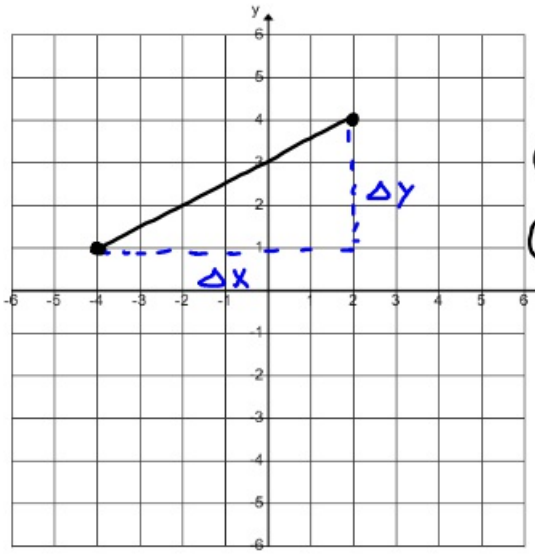
10-27-17 1st Trig



① Slope

② midpoint

③ Distance $\sqrt{\Delta x^2 + \Delta y^2}$

① (2, 6) (4, 10)

$$\text{slope} = \frac{\Delta y}{\Delta x} = \frac{10-6}{4-2} = \frac{4}{2} = 2$$

$$\text{midpoint} = \left(\frac{2+4}{2}, \frac{6+10}{2}\right) = (3, 8)$$

$$\text{distance} = \sqrt{2^2 + 4^2}$$

$$\sqrt{20}$$

$$\approx 4.5$$

② Give the equation in Slope Intercept form that is ⊥ to $y = \frac{1}{4}x + 6$ and goes through $(2, 1)$.

$m = \frac{1}{4}$

$\therefore \perp m = -4$

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

$y - 1 = -4(x - 2)$

$y - 1 = -4x + 8$

$+1 \qquad +1$

$y = -4x + 9$

③ Give the eq. in SIF that goes through $(2, 8)$ and is parallel to $2y + 10x = 1$.

$-10x \quad -10x$

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

$y = -5x + \frac{1}{2}$

$m = -5$

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

$y - 8 = -5(x - 2)$

$y - 8 = -5x + 10$

$+8 \qquad +8$

$y = -5x + 18$

④ Convert to Standard form

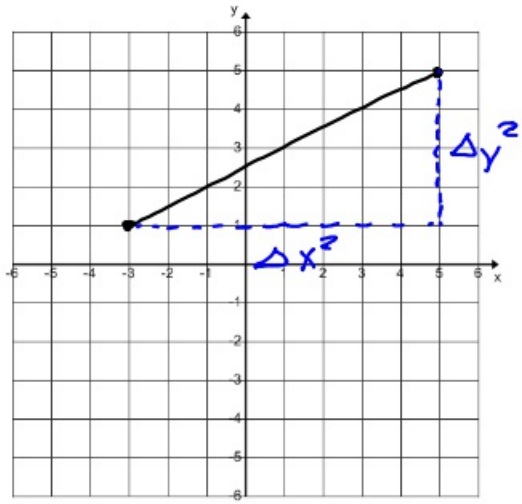
$$y = \frac{2}{3}x + \frac{1}{2}$$

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

$$-6\left[-\frac{2}{3}x + y = \frac{1}{2}\right]$$

$$4x - 6y = -3$$

$$-\frac{6}{1} \cdot -\frac{2}{3} = \frac{12}{3} = 4$$



Slope

midpoint

Distance

$\sqrt{\Delta x^2 + \Delta y^2}$

① (2,1)(4,9)

$\text{Slope} = \frac{\Delta y}{\Delta x} = \frac{9-1}{4-2} = \frac{8}{2} = 4$

$\text{midpoint} = \left(\frac{2+4}{2}, \frac{1+9}{2}\right) = (3,5)$

$\text{Distance} = \sqrt{\Delta x^2 + \Delta y^2}$

$= \sqrt{2^2 + 8^2}$

$= \sqrt{68}$

≈ 8.2

② Give the equation in Slope Intercept form that goes through (2,6) and is $\perp$ to $y = \frac{1}{5}x - 7$.

$m = \frac{1}{5}$

$\therefore \perp m = -5$

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

$y - 6 = -5(x - 2)$

$y - 6 = -5x + 10$

$+6 \qquad +6$

$y = -5x + 16$

③ Put in Standard form

$$y = \frac{1}{2}x - \frac{1}{5}$$

$$-\frac{1}{2}x \quad -\frac{1}{2}x$$

$$-10\left[-\frac{1}{2}x + y = -\frac{1}{5}\right]$$

$$5x - 10y = 2 \qquad \frac{-10}{1} \cdot -\frac{1}{5} = \frac{10}{5} = 2$$

④ Give the equation in Standard form that goes through (2,7)(4,11).

$$m = \frac{\Delta y}{\Delta x} = \frac{11-7}{4-2} = \frac{4}{2} = 2$$

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

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

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

$$+7 \qquad +7$$

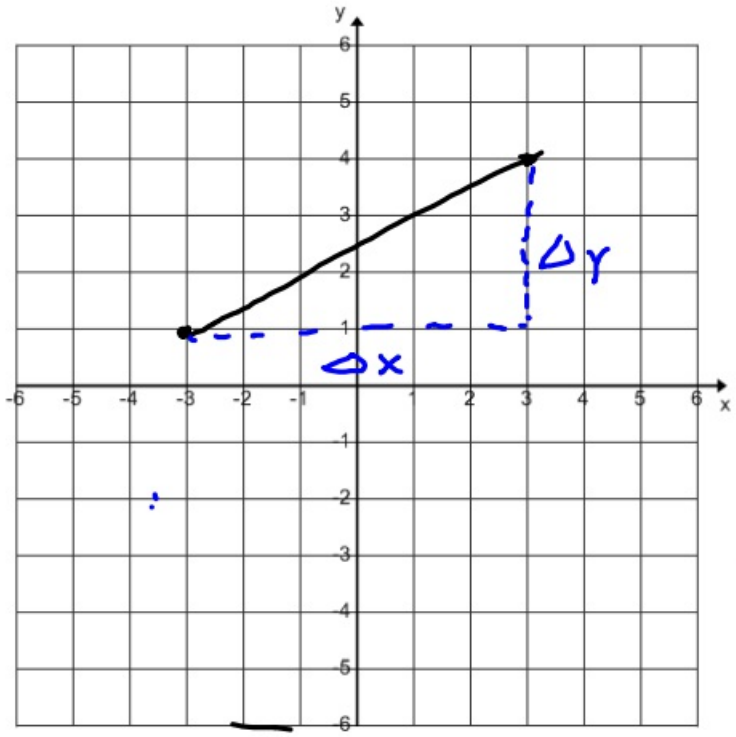
$$y = 2x + 3$$

$$-2x \quad -2x$$

$$-1\left[-2x + y = 3\right]$$

$$2x - y = -3$$

10-27-17 4th Try



Slope $\frac{\Delta y}{\Delta x}$

midpoint =

Distance

$\sqrt{\Delta x^2 + \Delta y^2}$

① (2, 10) (4, 6)

$\text{Slope} = \frac{\Delta y}{\Delta x} = \frac{10-6}{2-4} = \frac{4}{-2} = -2$

$\text{midpoint} = \left(\frac{2+4}{2}, \frac{10+6}{2}\right) = (3, 8)$

$\text{distance} = \sqrt{\Delta x^2 + \Delta y^2}$

$\sqrt{2^2 + 4^2}$

$\sqrt{20} \approx 4.5$

② Give the equation in slope intercept form that goes through $(2,2)$ and is $\perp$ to $y = \frac{1}{5}x - 11$.

$m = \frac{1}{5}$

$\therefore \perp m = -5$

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

$y - 2 = -5(x - 2)$

$y - 2 = -5x + 10$

$+2 \qquad +2$

$y = -5x + 12$

③ Put in Standard form

$y = \frac{1}{2}x - \frac{1}{5}$

$-\frac{1}{2}x \quad -\frac{1}{2}x$

$-10\left[-\frac{1}{2}x + y = -\frac{1}{5}\right]$

$5x - 10y = 2$ $\quad \frac{-10}{1} \cdot \frac{-1}{5} = \frac{10}{5}$