

Each problem is worth 5 points. For full credit indicate clearly how you reached your answer.

1. Find the distance between the points $(-2, 4)$ and $(1, 0)$.

$$\begin{aligned} \text{Distance} &= \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2} \\ &= \sqrt{(-2 - 1)^2 + (4 - 0)^2} \\ &= \sqrt{(-3)^2 + (4)^2} \\ &= \sqrt{9 + 16} \\ &= \sqrt{25} \\ \text{distance} &= 5 \end{aligned}$$

I used the distance formula: $\sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$ and plugged the numbers in for the variables. I then simplified the problem in the radical sign till it came down to $\sqrt{25}$, which equals 5 and that's your distance between points $(-2, 4)$ and $(1, 0)$.

Excellent!

2. Find an equation for the line through the points $(2, 10)$ and $(5, 4)$.

x_1, y_1 x_2, y_2

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\frac{4 - 10}{5 - 2} = \frac{-6}{3} = -2$$

$$\text{slope} = -2$$

$$y - y_0 = m(x - x_0)$$

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

$$y - 10 = -2x + 4$$

$$y = -2x + 14$$

Great Again!

I took the slope formula, rise over run, plugged in the x and y coordinates and found the slope first. Then I took another formula - plugged in the coordinates of first points: $(2, 10)$ and continued to ~~add~~ distribute the 2 - added the ~~10~~ to both sides and I got the equation.