Bell Work (10 – 12 minutes)

Solve for x:

$$|3x - 5| + 7 = 26$$

Solve for x:

$$12 > 4|2x+7|$$

Put these examples in your notes… you can use them for the quiz that we will take ***next class time****.*

******The next slide will help if needed.*

(Copy into notes 5 – 8 minutes)

Solve for x:

$$|3x - 5| + 7 = 26$$
$$-7 \quad -7$$
$$|3x - 5| = 19$$

There are two possible answers…

$3x - 5 = 19$ *or* $3x - 5 = -19$

$+5 \quad +5$ $\quad +5 \quad +5$

$3x = 24$ $\quad 3x = -14$

$\boldsymbol{x = 8}$ **or** $\boldsymbol{x = -14/3}$

Solve for x:

$$\frac{12}{4} > \frac{4|2x+7|}{4}$$
$$3 > |2x + 7|$$

There are two possible answers…

$3 > 2x + 7$ or $-3 < 2x + 7$

$-4 > 2x$ or $-10 < 2x$

$\boldsymbol{-2 > x}$ **or** $\boldsymbol{-5 < x}$

Flip sign Because Answer Was negative

Doesn't flip because we divided by a positive 2

From Last Time… (18 – 20 minutes)

New Material

Page 45 #2-5, 29, 45, 65

Mixed Review

Page 48 #96, 99

ALGEBRA 3

Day 11

Chapter 2 Section 3
Linear Equations (20 – 30 minutes)

Objective: To write, graph, and solve linear equations

3 Linear Function Formulas

$$1.)\ slope \rightarrow \frac{vertical\ change\ (rise)}{horizontal\ change\ (run)} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$2.)\ slope - intercept\ form \rightarrow \quad y = mx + b$$

$$3.)\ point - slope\ form \rightarrow \quad y - y_1 = m(x - x_1)$$

Note: the points are $(x_1, y_1)\ and (x_2, y_2)\ \ and\ slope\ is\ m$

Don’t Memorize Them, Apply Them

Given the following two points, find the slope, write the equation.

(-6, 4) and (-2, -12)

Given the following two points, find the slope, write the equation.

$(x_1, y_1)\ and (x_2, y_2)$

(-6, 4) and (-2, -12)

$$slope = \frac{y_2 - y_1}{x_2 - x_1} = \frac{(-12) - (4)}{(-2) - (-6)} = \frac{-16}{4} = \mathbf{-4}$$

$$point - slope\ form \rightarrow \quad y - y_1 = m(x - x_1)$$

$$y - (4) = -4\big(x - (-6)\big) \rightarrow \quad y - 4 = -4x - 24 \rightarrow \quad \mathbf{y = -4x + 28}$$

Given the following two points, find the slope, write the equation – with color to help visualize.

$(x_1, y_1)\ and (x_2, y_2)$

(-6, 4) and (-2, -12)

$$slope = \frac{y_2 - y_1}{x_2 - x_1} = \frac{(-12) - (4)}{(-2) - (-6)} = \frac{-16}{4} = -4$$

$$point - slope\ form \rightarrow \quad y - y_1 = m(x - x_1)$$

$$y - (4) = -4\big(x - (-6)\big) \rightarrow \quad y - 4 = -4x - 24 \rightarrow \quad \boldsymbol{y = -4x + 28}$$

What else could they ask us?

Given: (-6, 4) and (-2, -12)

What else could they ask us?

Given: (-6, 4) and (-2, -12)

Some Examples:

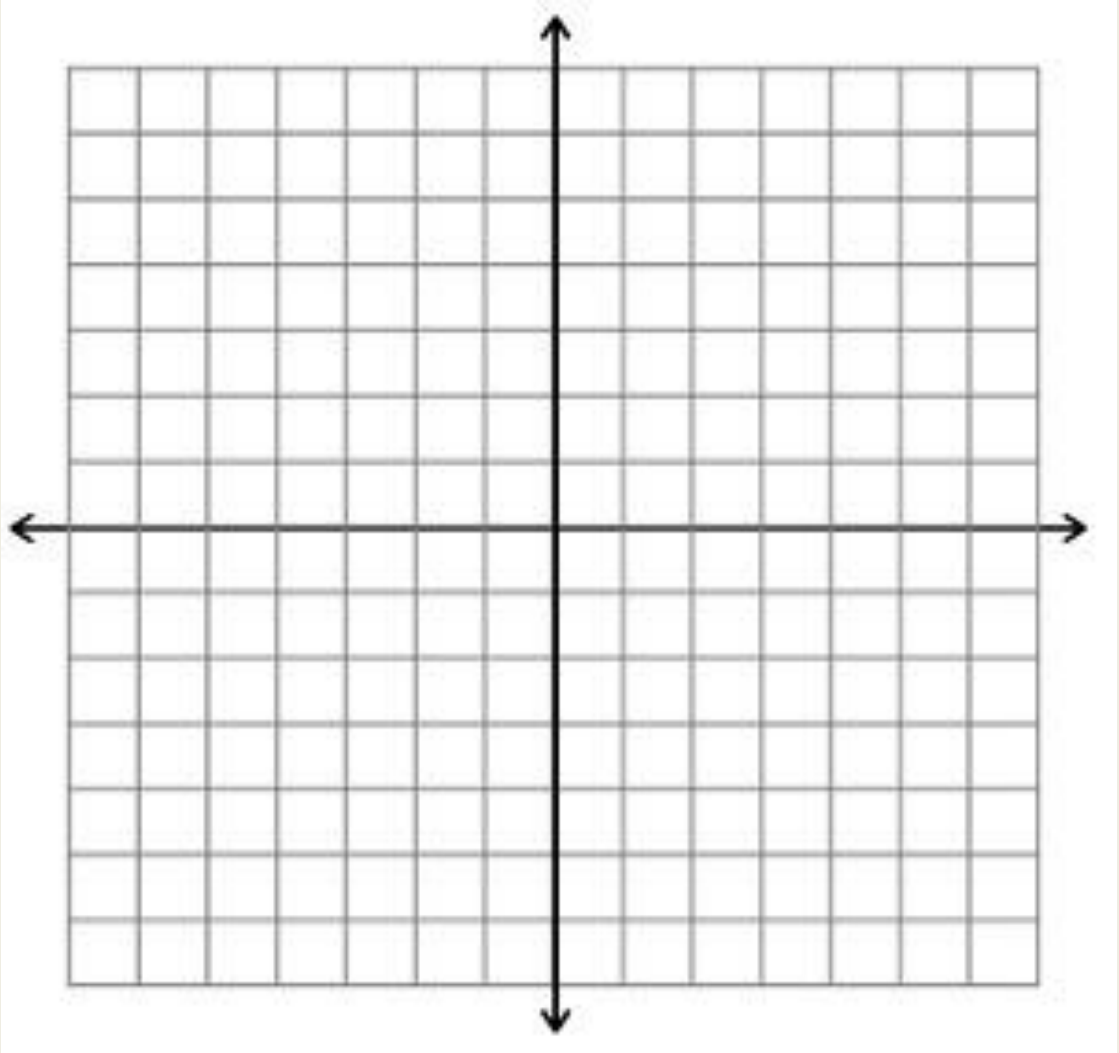
What is the distance between (how far apart are they) these two points?

What is the midpoint of these two points?

Graph.

Graph the following. Is it a function?

$4y - 2x = -12$

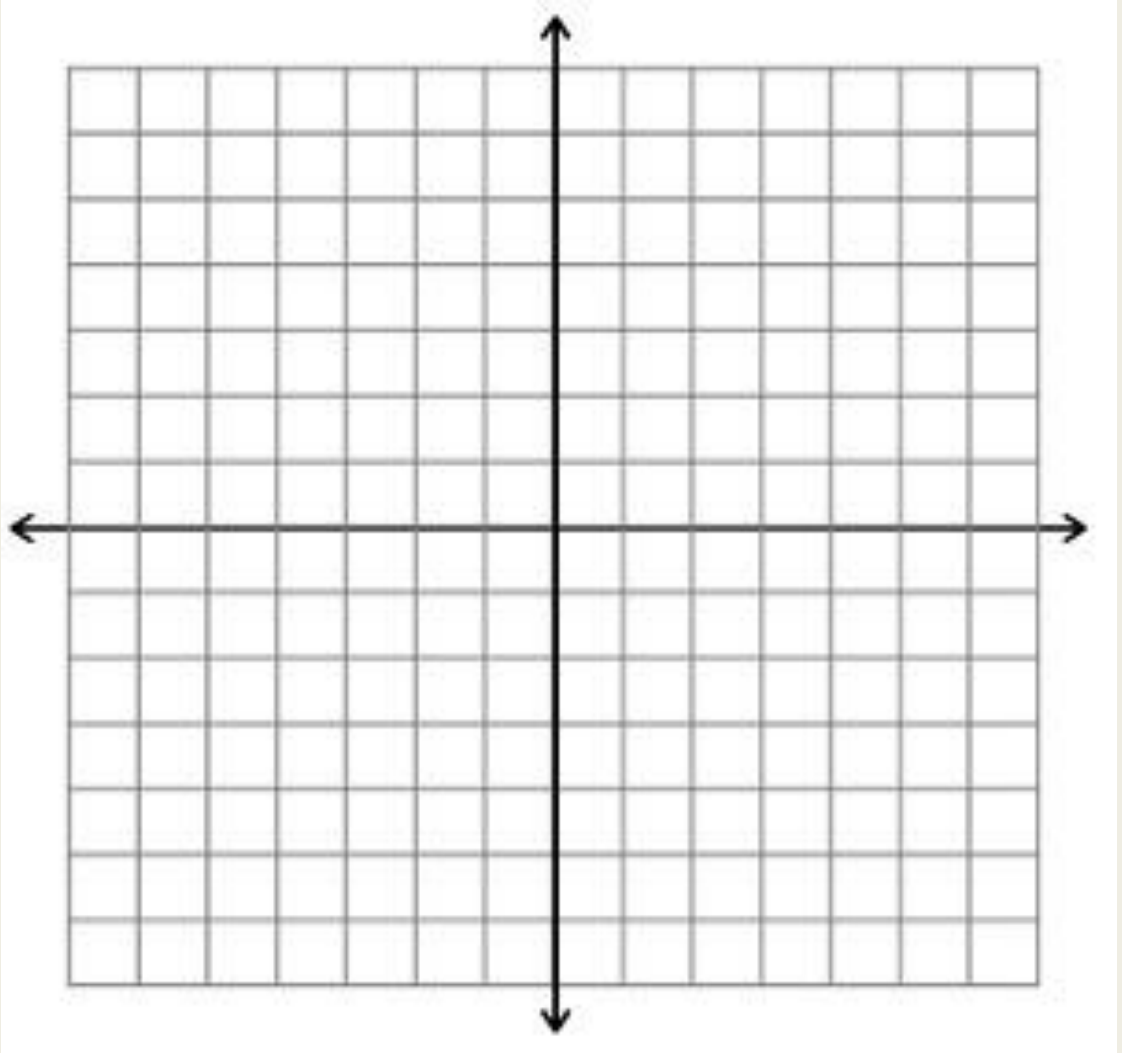


Graph the following. Is it a function?

$4y - 2x = -12$

Plug in the following x and solve for y

X	y
-2	
-1	
0	
1	
2	

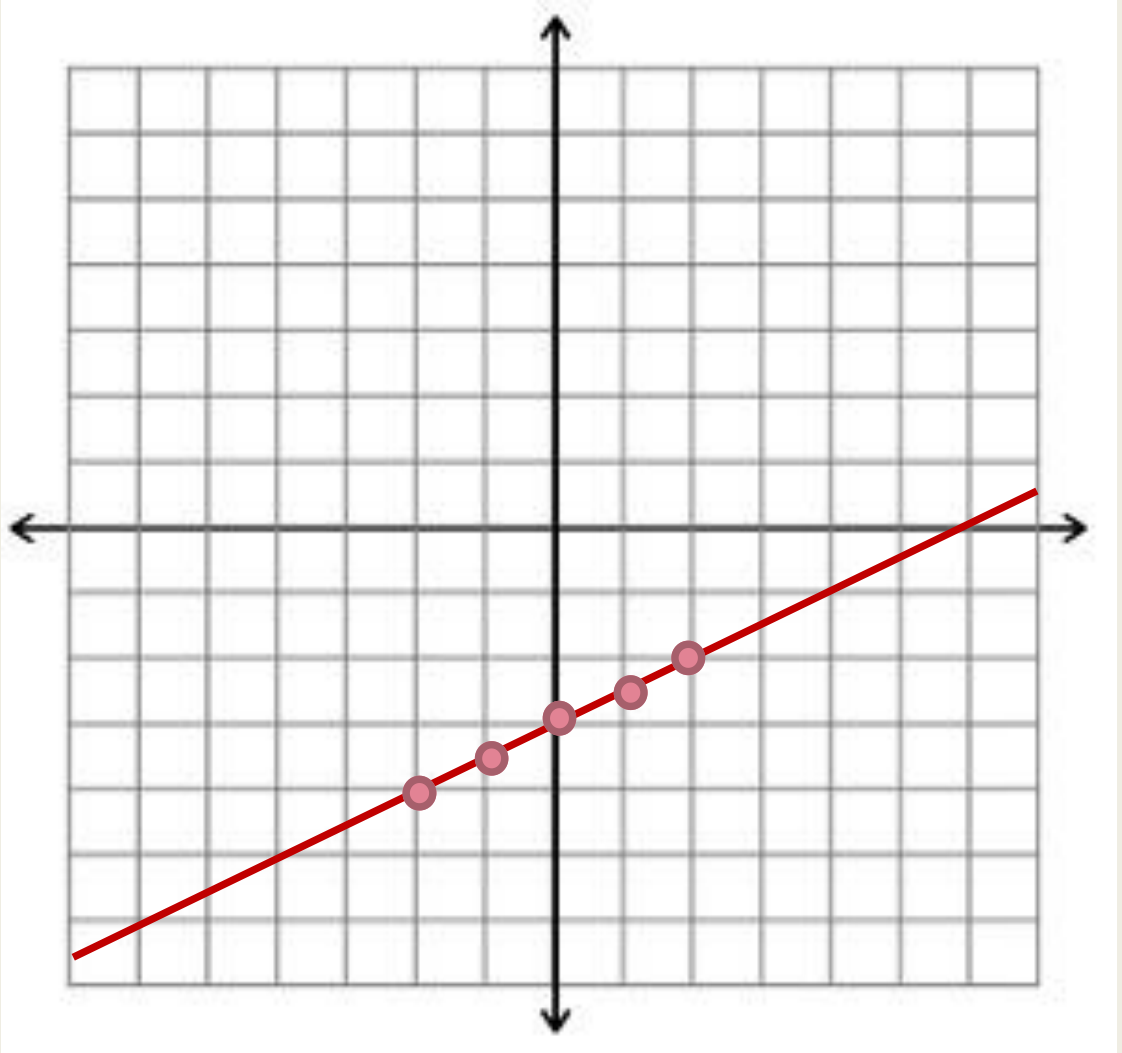


Graph the following.

$4y - 2x = -12$

Graph the following points now

X	y
-2	-4
-1	-14/4= -3.5
0	-3
1	-10/4= -2.5
2	-2



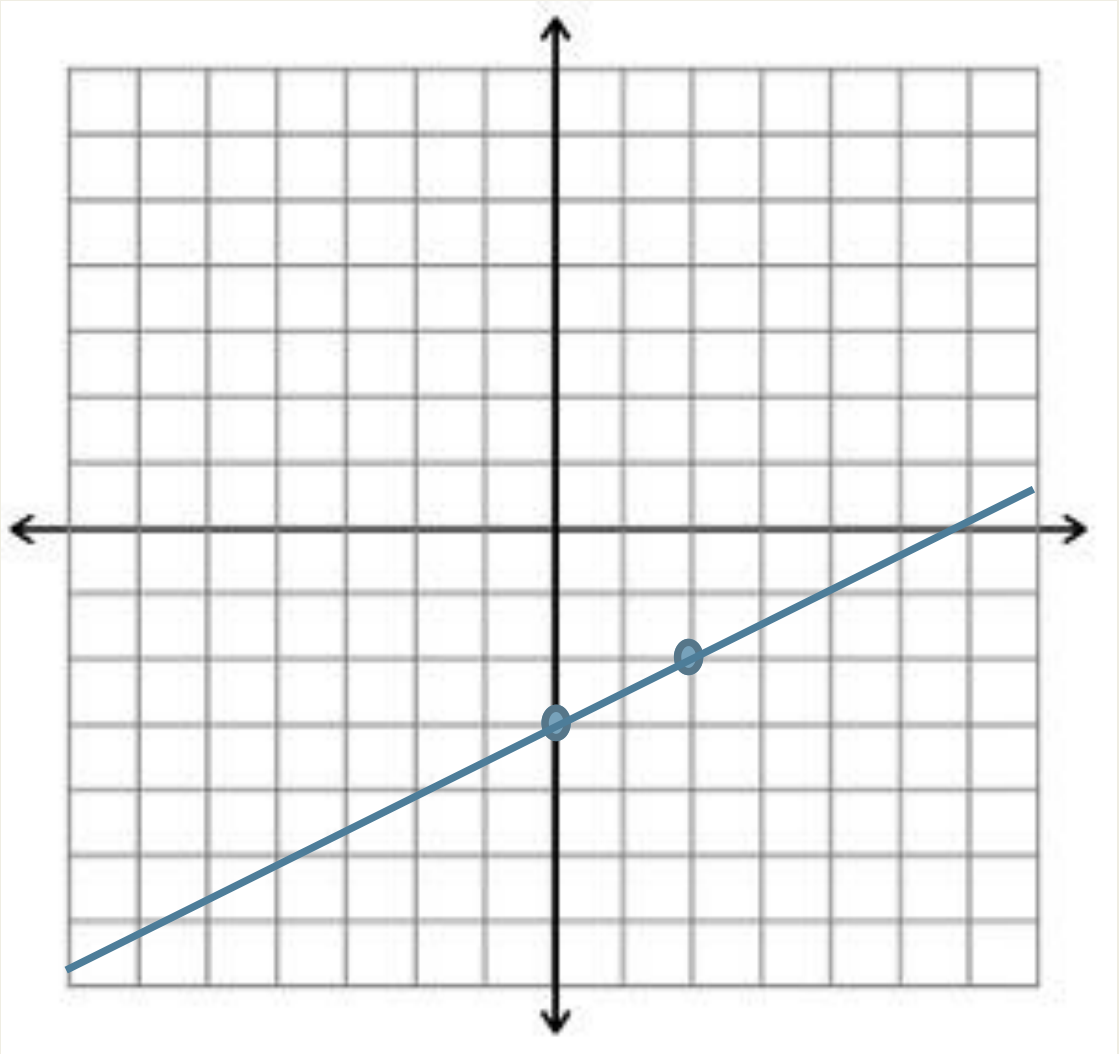
Graph the following. Another option… solve the equation for y and then type into your calculator!

$4y - 2x = -12$

$4y = 2x - 12$

$y = \frac{2x - 12}{4}$

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



Quick Check for Understanding

Describe the slope between the following two special cases.

(4, 2) and (4, -6)

Can you write the equation of the line that passes through these two points?

Can you graph the line?

For Next Time… (20 – 30 minutes)

New Material

Page 78 #4-6, 23, 31, 37, 50

Mixed Review

Page 80 #68, 69, 71