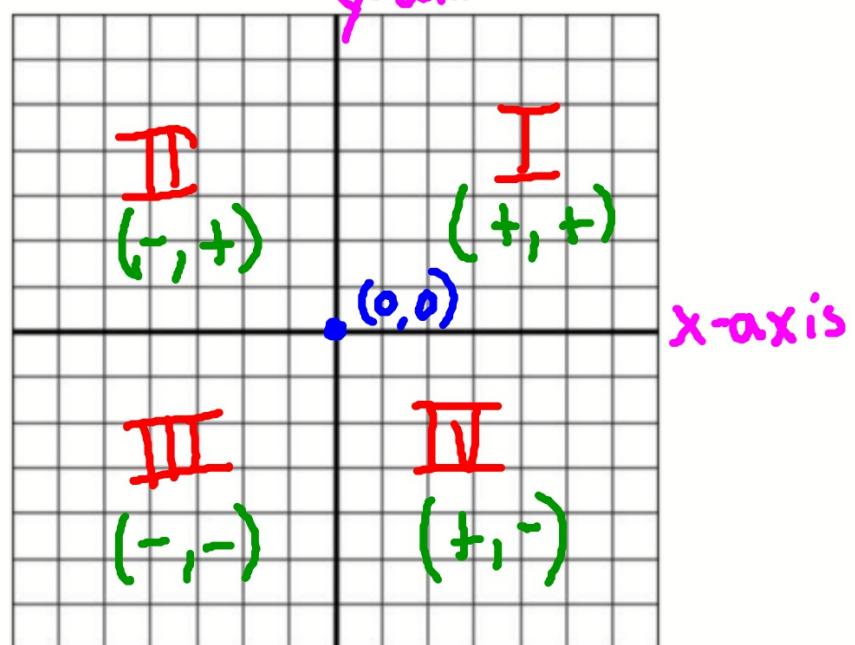


1.1) RECTANGULAR COORDINATES

Pg 9 # 1- Do Now!

Coordinate Plane

- Label: x, y-axis, origin, quadrants
- Plot points



Distance Formula

$$D = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

1.) (3, 7), (4, -2)

$$\begin{aligned} D &= \sqrt{(4-3)^2 + (-2-7)^2} \\ D &= \sqrt{1 + 81} \\ D &= \sqrt{82} \end{aligned}$$

2.) (-6, 0), (-3, 4)

$$\begin{aligned} D &= \sqrt{(-3+6)^2 + (4-0)^2} \\ D &= \sqrt{9 + 16} = \sqrt{25} \\ D &= 5 \end{aligned}$$

Midpoint Formula

$$M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

1.) (3, 7), (4, -2)

$$M = \left(\frac{3+4}{2}, \frac{7+(-2)}{2} \right)$$

$$M = (3.5, 2.5)$$

2.) (-6, 0), (-3, 4)

$$M = \left(\frac{-6+(-3)}{2}, \frac{0+4}{2} \right)$$

$$M = (-4.5, 2)$$



CLASSWORK

PG 9 # 3, 7-19

1.2) GRAPHS OF EQUATIONS



Graphing Equations- Examples

1.) $y = 2x - 4$

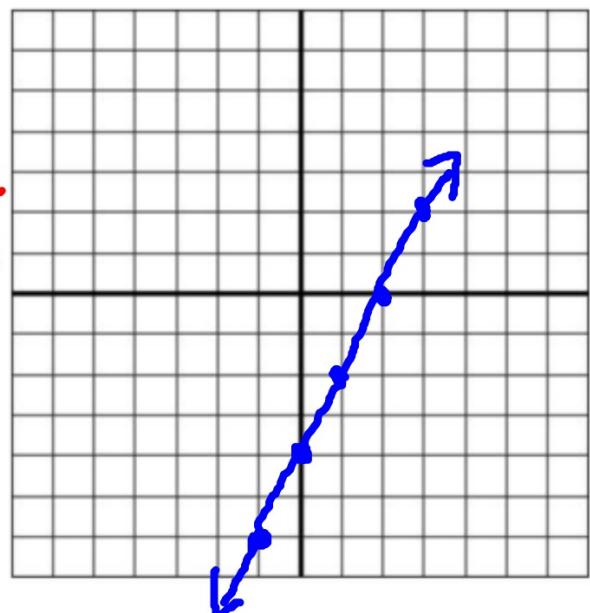
$y = mx + b$

$m = \text{slope} = \frac{\text{rise}}{\text{run}}$

$b = y\text{-intercept}$

$m = 2 = \frac{2}{1}$

$b = -4$



Graphing Equations

2.) $y = -3x + 2$

$$y = mx + b$$

$$m = -3 = -\frac{3}{1}$$

$$b = 2$$



Intercepts

X-intercept

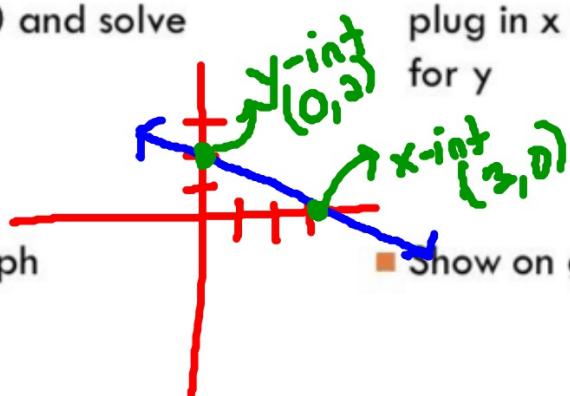
- The point on the graph where it crosses the x-axis
- To find the x-intercept, plug in $y = 0$ and solve for x

■ Show on graph

Y-intercept

- The point on the graph where it crosses the y-axis
- To find the y-intercept, plug in $x = 0$ and solve for y

■ Show on graph



Examples

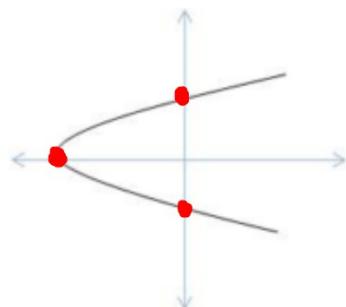
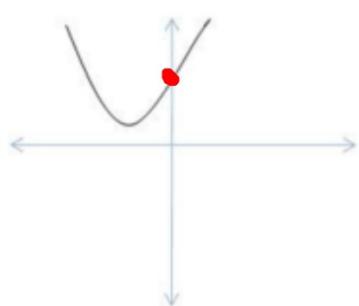
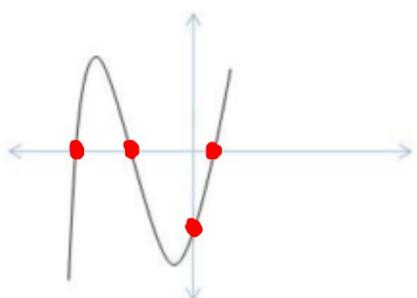
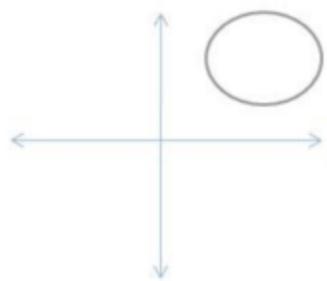
1.) $3x + 4y = 10$

<u>x-int</u>	<u>y-int</u>
$3x + 4(0) = 10$ $3x = 10$ $x = \frac{10}{3}$ $(\frac{10}{3}, 0)$	$3(0) + 4y = 10$ $4y = 10$ $y = 2.5$ $(0, 2.5)$

2.) $y = \sqrt{x+2}$

<u>x-int</u>	<u>y-int</u>
$0 = \sqrt{x+2}$ $0 = x+2$ $-2 = x$ $(-2, 0)$	$y = \sqrt{0+2}$ $y = \sqrt{2}$ $(0, \sqrt{2})$

How many intercepts?



Symmetry Graphs

See board

Homework

Pg 10 # 31-35 odd

Pg 22-23 # 5-13 odd, 21-29