Unit 9: Graphing

Name: Key

Lesson 4: Graphing with Intercepts

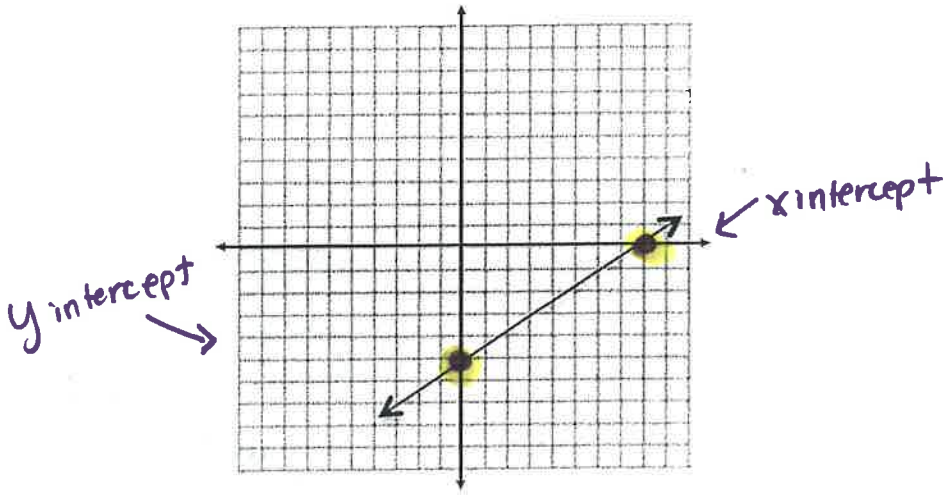
Hour:

Notes 9.4

Intercepts

x-intercept: The point where a line crosses the x axis.
$y=0$ $(x,0)$

y-intercept: The point where a line crosses the y axis.
$x=0$ $(0,y)$



Find the Intercepts of a Graph

Find the intercepts of the graph of $3x - 2y = 6$

1. To find the x-intercepts $y = 0$

$3x-2(0)=6$
$3x=6$
$x=2$
$(2,0)$

2. To find the y-intercept $x = 0$

$3(0)-2y=6$
$-2y=6$
$y=-3$
$(0,-3)$

Find the Intercepts of a Graph

Graph $4x+2y=12$ using the intercepts.

1. Find the x and y intercepts

x int

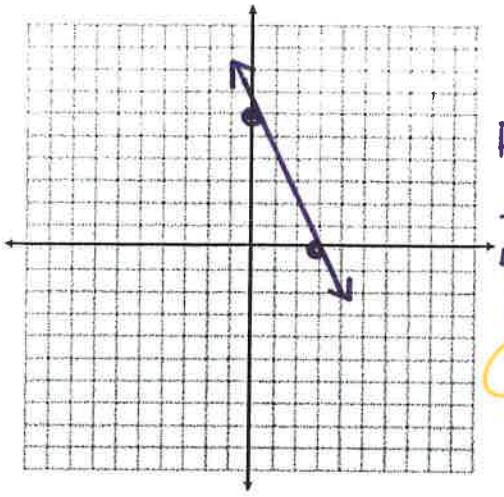
$4x+2(0)=12$
$4x=12$
$x=3$
$(3,0)$

y int

$4(0)+2y=12$
$2y=12$
$y=6$
$(0,6)$

2. Plot the points on the coordinate plane

3. Draw the line to represent all solutions



Function Form:

$4x+2y=12$
$2y=-4x+12$
$y=-2x+6$

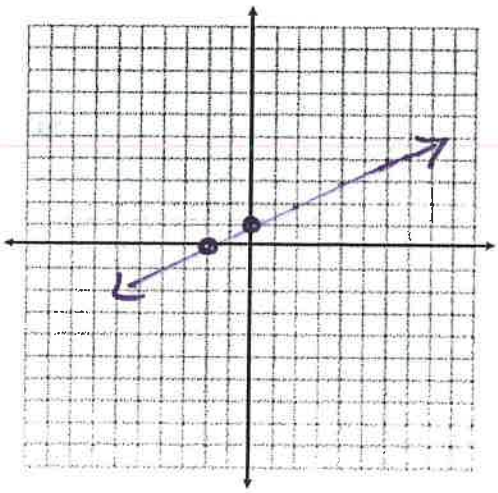
1. Graph $x-2y=-2$ using intercepts.

x int

$x-2(0)=-2$
$x=-2$
$(-2,0)$

y int

$(0)-2y=-2$
$-2y=-2$
$y=1$
$(0,1)$



Function Form:

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

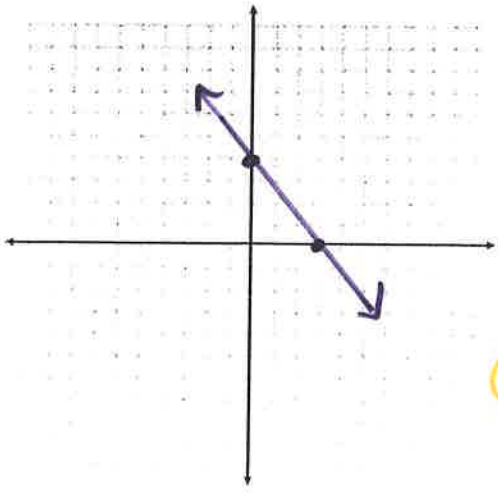
2. Graph $4x+3y=12$ using intercepts.

x int

$4x+3(0)=12$
$4x=12$
$x=3$
$(3,0)$

y int

$4(0)+3y=12$
$3y=12$
$y=4$
$(0,4)$



Function Form:

$4x+3y=12$
$3y=-4x+12$
$y=-\frac{4}{3}x+4$

Find the x and y intercepts for the following equations:

3. $4x + 5y = -60$

x int

$4x + 5(0) = -60$

$4x = -60$

$x = -15$

$(-15, 0)$

y int

$4(0) + 5y = -60$

$5y = -60$

$y = -12$

$(0, -12)$

4. $-x + 3y = -9$

x int

$-x + 3(0) = -9$

$-x = -9$

$x = 9$

$(9, 0)$

y int

$-(0) + 3y = -9$

$3y = -9$

$y = -3$

$(0, -3)$