Calculate and graph using x- and y-intercepts

x-intercept: The point where a line crosses the x-axis

Ex. 1) $y = 2x-2$

1. set $y = 0$
2. rewrite the equation;

$0=2x-2$

3. solve for x

$0=2x-2$

$0+2=2x-2+2$

$2=2x$

$2/2=2x/2$

$1=x$

The x-intercept =1

ordered pair (1,0)

y-intercept: The point where a line crosses the y-axis

Ex. 2) y = 2x-2

1. set x = 0
2. rewrite the equation; y=2(0)-2
3. solve for y

y=2(0)-2
y=0-2
y= -2
The y-intercept = -2
ordered pair (0,-2)

Try These
Find the x- and y- intercept

1) x + y = 7

2) x - 3y = 9

3) 2x + 3y = -6

1) $x+y=7$

x-int., let $y=0$

$x+y=7$

$x+0=7$

$x=7$

$(7,0)$

y-int., $x=0$

$x+y=7$

$0+y=7$

$y=7$

$(0,7)$

2) $x-3y=9$

x-int., let $y=0$

$x-3y=9$

$x-3(0)=9$

$x-0=9$

$x=9$

$(9,0)$

y-int., let $x=0$

$x-3y=9$

$0-3y=9$

$-3y=9$

$y=-3$

$(0,-3)$

3) $2x+3y=-6$

x-int., let $y=0$

$2x+3y=-6$

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

$2x+0=-6$

$2x=-6$

$x=-3$

$(-3,0)$

y-int., let $x=0$

$2x+3y=-6$

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

$0+3y=-6$

$3y=-6$

$y=-2$

$(0,-2)$

4) $-4x - 2y = -8$

x-int., let $y=0$

$-4x-2y=-8$

$-4x-2(0)=-8$

$-4x-0=-8$

$-4x=-8$

$x=2$

$(2,0)$

y-int., let $x=0$

$-4x-2y=-8$

$-4(0)-2y=-8$

$0-2y=-8$

$-2y=-8$

$y=4$

$(0,4)$

5) $5x - 4y = -12$

x-int., let $y=0$

$5x-4y=-12$

$5x-4(0)=-12$

$5x-0=-12$

$5x=-12$

$x=\frac{-12}{5}$

$(\frac{-12}{5},0)$

y-int., let $x=0$

$5x-4y=-12$

$5(0)-4y=-12$

$0-4y=-12$

$-4y=-12$

$y=3$

$(0,3)$

6) $-2x + 7y = 11$

x-int., let $y=0$

$-2x+7y=11$

$-2x+7(0)=11$

$-2x+0=11$

$-2x=11$

$x=-\frac{11}{2}$

$(\frac{-11}{2},0)$

y-int., let $x=0$

$-2x+7y=11$

$-2(0)+7y=11$

$0+7y=11$

$7y=11$

$y=\frac{11}{7}$

$(0,\frac{11}{7})$

Graphing x- and y- intercepts

1. Find the intercepts
2. Plot
3. Connect

Ex. 3)

$2x - y = 2$

x-intercept

let $y = 0$

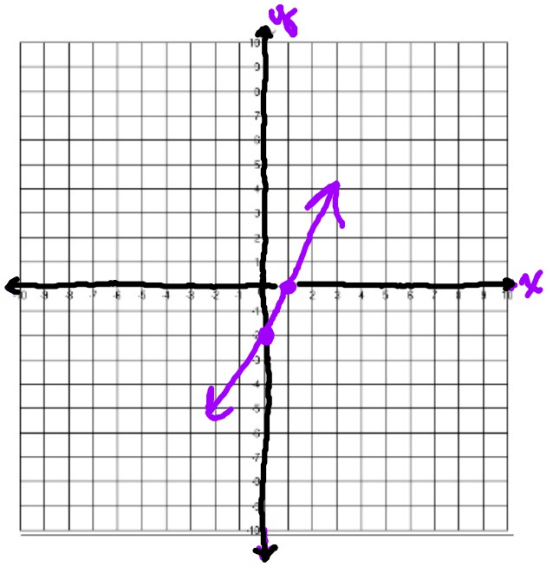
$2x - y = 2$

$2x - 0 = 2$

$2x = 2$

$x = 1$

$(1, 0)$



$2x - y = 2$

y- intercept

let $x = 0$

$2x - y = 2$

$2(0) - y = 2$

$0 - y = 2$

$-y = 2$

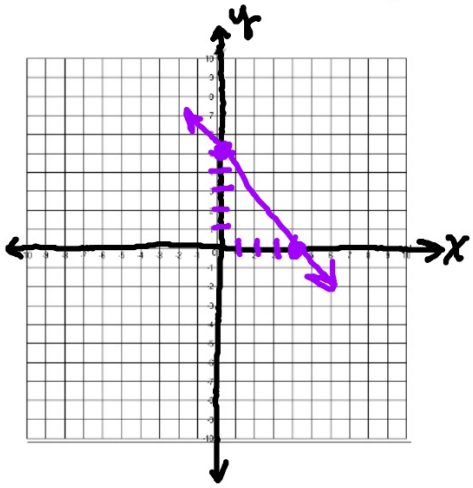
$y = -2$

$(0, -2)$

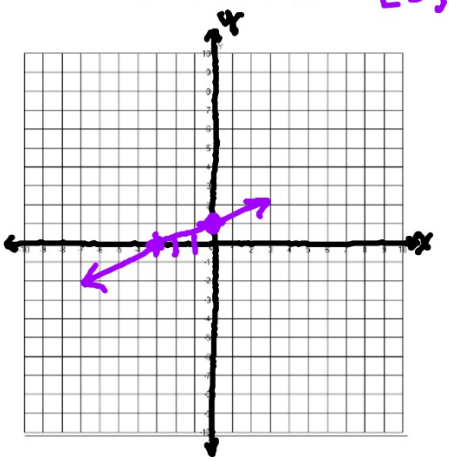
Graph given x and y-intercepts

Try These Graphing

1) x- intercept 4 (4,0)
y- intercept 5 (0,5)



2) x- intercept -3 (-3,0)
y- intercept 1 (0,1)



3) x- intercept -6 (-6,0)
y-intercept -8 (0,-8)