

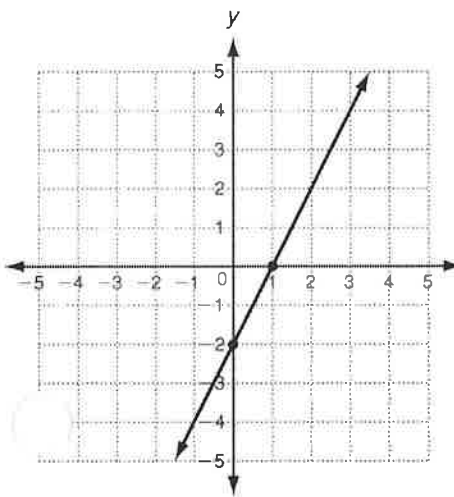
Using Intercepts

Objective: Find the x & y intercepts. Use the x & y intercepts to graph a line.

x-intercept: x-coordinate of the point where the graph intersects the x-axis.

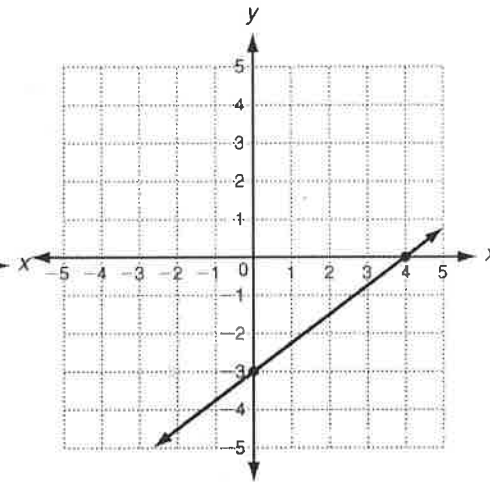
y-intercept: y-coordinate of the point where the graph intersects the y-axis.

Example 1: Use the graphs below to find the x & y intercepts.



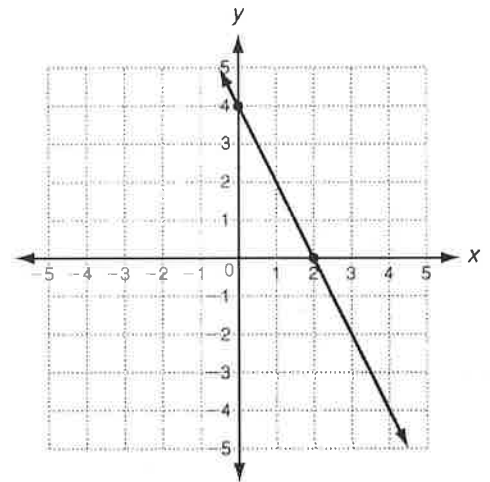
x-intercept: (1, 0)

y-intercept: (0, -2)



x-intercept: (4, 0)

y-intercept: (0, -3)



x-intercept: (2, 0)

y-intercept: (0, 4)

To find the x-intercept:

- 1.) Substitute 0 in for y
- 2.) Solve for x

To find the y-intercept:

- 1.) Substitute 0 in for x
- 2.) Solve for y

Example 2: Find the x & y intercepts.

a.) $3x - 2y = 6$

<u>xint:</u> $y=0$		<u>yint:</u> $x=0$
$3x - 2(0) = 6$		$3(0) - 2y = 6$
$\frac{3x}{3} = \frac{6}{3}$		$\frac{-2y}{-2} = \frac{6}{-2}$
$x = 2$		$y = -3$
$(2, 0)$		$(0, -3)$

b.) $4x + y = -8$

<u>xint:</u> $y=0$		<u>yint:</u> $x=0$
$4x + 0 = -8$		$4(0) + y = -8$
$\frac{4x}{4} = \frac{-8}{4}$		$y = -8$
$x = -2$		
$(-2, 0)$		$(0, -8)$

Example 3: Use the x & y intercepts to graph the line.

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

xint: $y=0$

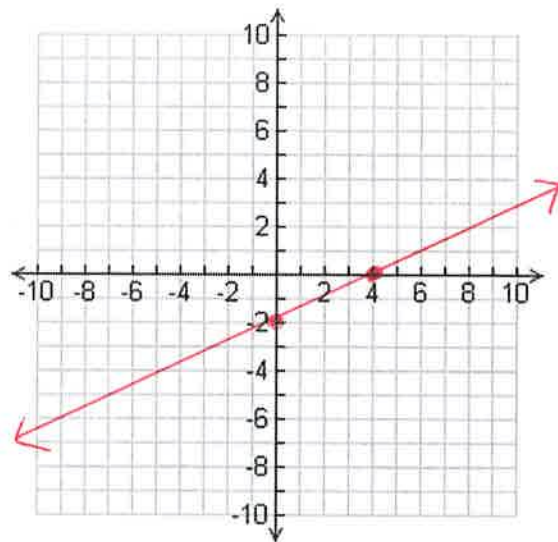
$$\frac{2x}{2} = \frac{8}{2}$$

$$x=4 \quad (4,0)$$

yint: $x=0$

$$\frac{-4y}{-4} = \frac{8}{-4}$$

$$y=-2 \quad (0,-2)$$



b.) $y = 2x + 8$

xint: $y=0$

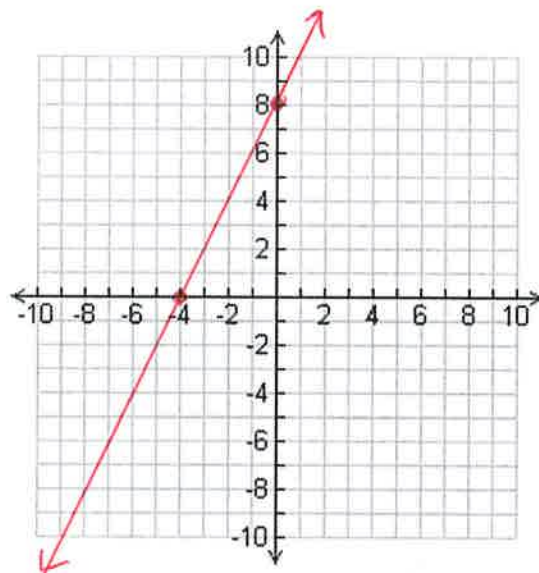
$$\frac{0}{-8} = \frac{2x+8}{-8}$$

$$\frac{-8}{2} = \frac{2x}{2}$$

$$-4 = x \quad (-4, 0)$$

yint: $x=0$

$$y=8 \quad (0, 8)$$



c.) $10x + y = 5$

xint: $y=0$

$$\frac{10x}{10} = \frac{5}{10}$$

$$x = \frac{1}{2} \quad (\frac{1}{2}, 0)$$

yint: $x=0$

$$y=5 \quad (0, 5)$$

