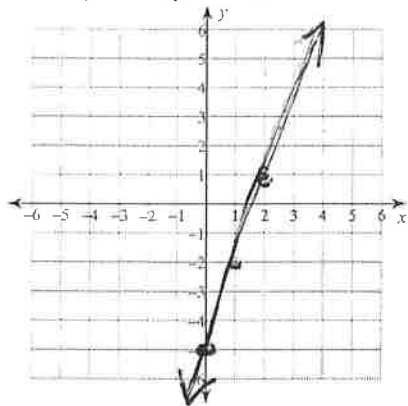


How to create equations...		
<p>...Given a slope and the y-intercept.</p> <p>Ex $m = \frac{3}{5}$ $b = -4$</p>	$y = mx + b$ $m = \text{slope}, b = \text{y-int}$ $(0, b)$ $y = \frac{3}{5}x - 4$ (just plug it in!)	
<p>...Given a slope and a point...</p> <p>Ex $m = -5$ $(-2, 30)$</p>	<p>... using $y = mx + b$.</p> $y = mx + b$ $30 = (-5)(-2) + b$ $30 = 10 + b$ $\frac{-10 \quad -10}{20 = b}$ <div style="border: 1px solid black; padding: 5px; display: inline-block;"> $y = -5x + 20$ </div>	<p>... using point slope form.</p> <ol style="list-style-type: none"> 1) Plug in y, m, x 2) Solve for b 3) Plug in $m \& b!$
<p>...Given two points...</p> <p>$P_1: (2, 6)$ $P_2: (8, 3)$</p>	<p>... using $y = mx + b$.</p> $m = \frac{3-6}{8-2} = \frac{-3}{6} = -\frac{1}{2}$ $y = mx + b$ $6 = -\frac{1}{2}(2) + b$ $6 = -1 + b$ $\begin{array}{r} +1 \quad +1 \\ 7 = b \end{array}$ $y = -\frac{1}{2}x + 7$	<p>... using point slope form.</p> <ol style="list-style-type: none"> 1) Find m. 2) Pick a point (easy one) 3) Plug in y, m, x. 4) Solve for b 5) Plug in $m \& b!$
<p>Slope = $-\frac{1}{4}$, y-intercept = 2</p>	<p>Slope = -2, through point (-4, 3)</p>	<p>Through points (1, 3) and (-5, -3)</p>

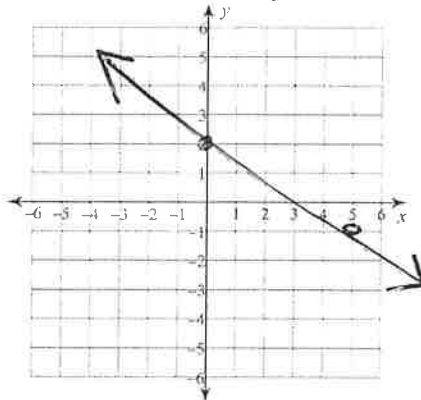
Notes 10/23 10/26

Graphing Shortcuts

Example 1: $y = 3x - 5$



Example 2: $y = -\frac{3}{5}x + 2$



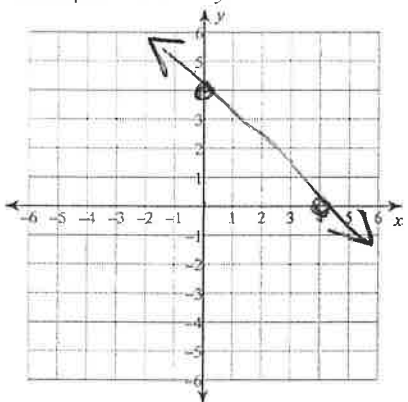
Shortcut

$$y = mx + b$$

$m = \text{slope } \left(\frac{\text{rise}}{\text{run}}\right)$

$b = y\text{-intercept (start here)}$

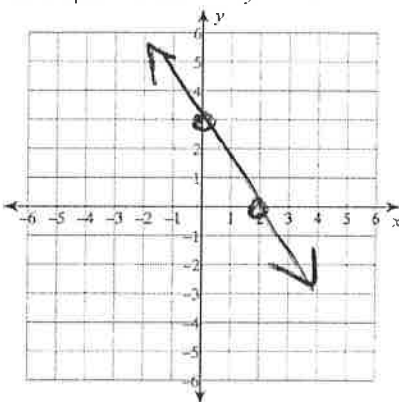
Example 1: $x + y = 4$



x	y
0	4
4	0

$$\begin{aligned} 0 + y &= 4 \\ y &= 4 \\ x + 0 &= 4 \\ x &= 4 \end{aligned}$$

Example 2: $3x + 2y = 6$



x	y
0	3
2	0

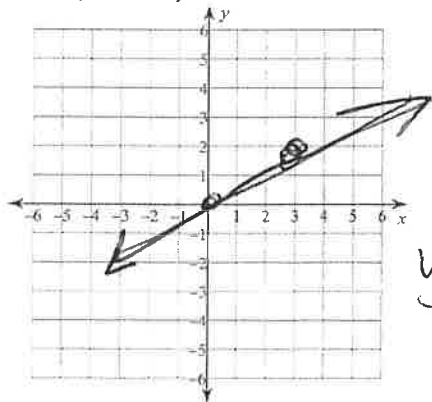
$$\begin{aligned} 0 + 2y &= 6 \\ y &= 3 \\ 3x + 0 &= 6 \\ x &= 2 \end{aligned}$$

Shortcut

When $Ax + By = \#$, set $x=0$ and $y=0$

x	y
0	0

Example 1: $3y = 2x$

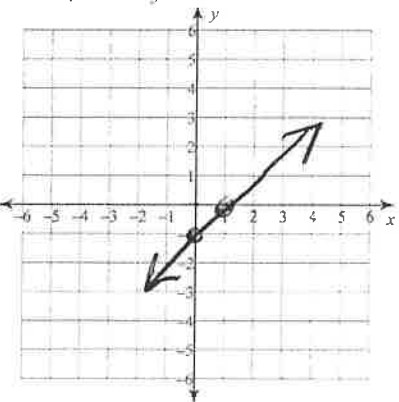


$$\frac{3y}{3} = \frac{2x}{3}$$

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

$$y = \frac{2}{3}x + 0$$

Example 2: $y - x + 1 = 0$



$$\begin{aligned} y - x &= -1 \\ y - 0 &= -1 \\ y &= -1 \end{aligned}$$

x	y
0	-1
1	0

$$\begin{aligned} 0 - x &= -1 \\ x &= 1 \end{aligned}$$

Shortcut

Rewrite to look like $y = mx + b$
or $Ax + By = \#$