Slope-Intercept Form

The slope-intercept form of the equation of a non-vertical line is written as:

$y = mx + b$ where m is the slope and the point (0, b) is the y-intercept.

For Slope-Intercept form, be sure the coefficient for the y, if present, is positive 1.

Consider the equation: $y = \frac{2}{3}x + 4$

This equation has a slope of $\frac{2}{3}$ and intercepts the y-axis at (0, 4).

If the slope and the y-intercept are known, one can easily write the equation of the line in Slope-Intercept form.

Given: L has slope 4 and y-intercept (0, -2)

Write the equation of the line in slope-intercept form.

$y = mx + b$ where m is the slope, 4, and the point (0, b) is the y-intercept (0, -2).
So b in this example is -2.
The equation would be: $y = 4x - 2$

Given: L has slope $-\frac{2}{3}$ and passes through (0,3)

Write the equation in slope-intercept form.
The point given is a y-intercept since it is in the form (0,3).
Therefore the equation would be: $y = -\frac{2}{3}x + 3$

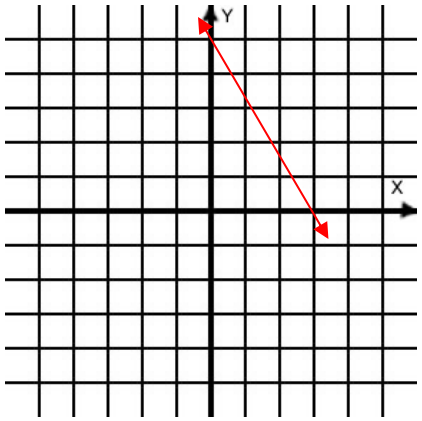
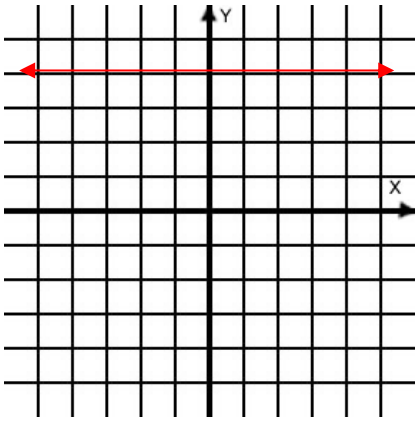
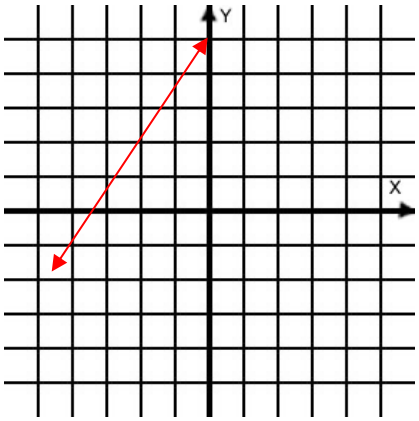
TRY:

Given the point (0,-1) and slope 3, write the equation in slope-intercept form.

Sometimes an equation in non slope-intercept form is given and one must rewrite the equation first to be able to identify the slope and y-intercept.

$5x+3y=15$ $3y=-5x+15$ $\frac{3}{3}y=-\frac{5}{3}x+\frac{15}{3}$ $y=-\frac{5}{3}x+5$ $m=-\frac{5}{3}$ y-intercept = (0,5)	$y-4=0$ $y=4$ Could be thought of as: $y=0x+4$ $m=0$ y-intercept = (0,4) The form: $y=4$ is acceptable, but is not as easy to see the slope.	$\frac{y+1}{x+4}=\frac{3}{2}$ $2(y+1)=3(x+4)$ use what you know about proportions $2y+2=3x+12$ $2y=3x+10$ $y=\frac{3}{2}x+5$ $m=\frac{3}{2}$ y-intercept = (0,5)

Use this information and graph the lines.

$5x+3y=15$ $y=-\frac{5}{3}x+5$ $m=-\frac{5}{3}$ y-intercept = (0,5)	$y-4=0$ $y=0x+4$ $m=0$ y-intercept = (0,4)	$\frac{y+1}{x+4}=\frac{3}{2}$ $y=\frac{3}{2}x+5$ $m=\frac{3}{2}$ y-intercept = (0,5)
		

In the last example, the graph was not big enough to go up 3 and over 2 from the point (0,5). One can either think of each block as 2 units OR one can think in reverse and go down 3 and back 2.