

Graphing from Equation $Ax + By = C$

To graph a linear equation that is not in the form $y = mx + b$ there are two options:

1. Find the x-int and y-int, graph the two points and connect them with a straight line. Recall: x-int($y=0$) and y-int($x=0$)

OR

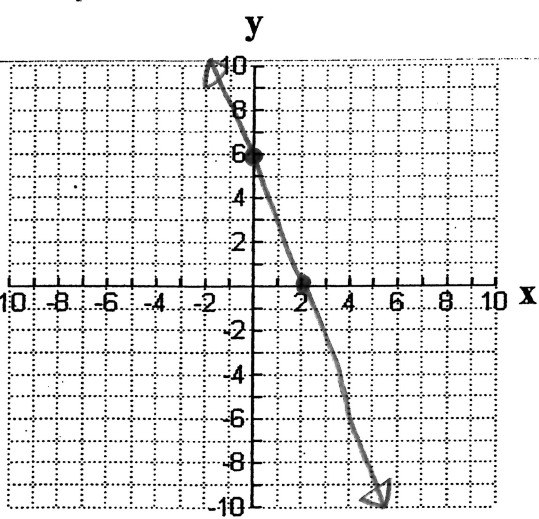
2. Change the equation into the form $y = mx + b$ by isolating the variable y and arrange the x -term as the first term on the right.

Graph each linear equation using each technique

a) $3x + y = 6$ using x-int/y-int

x-int ($y=0$)
 $3x + (0) = 6$
 $3x = \frac{6}{3}$
 $x\text{-int} = 2$

y-int ($x=0$)
 $3(0) + y = 6$
 $y\text{-int} = 6$

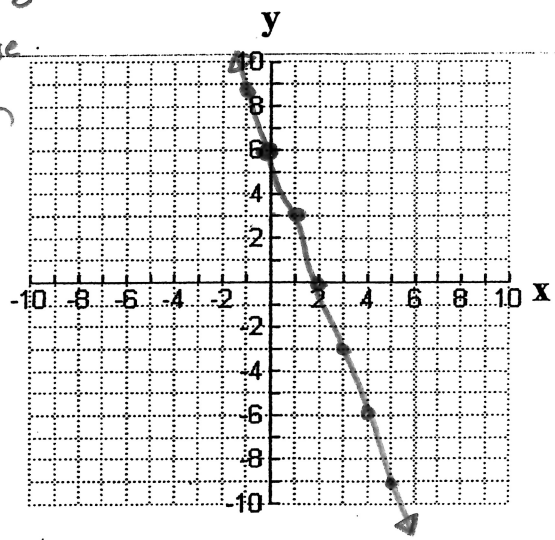


b) $3x + y = 6$ by changing to $y = mx + b$ form

$y = -3x + 6$

$m = \frac{-3}{1}$ rise
run

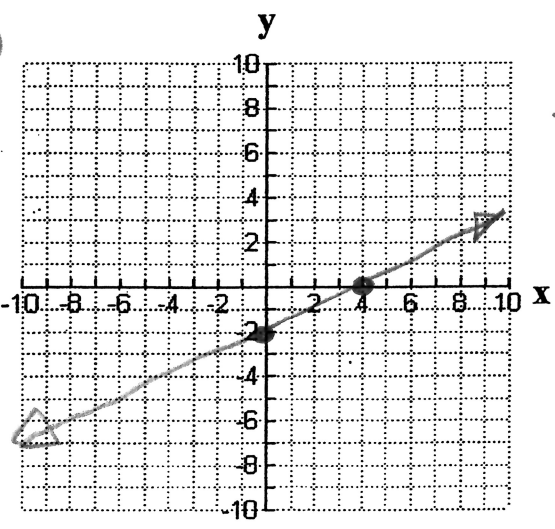
$b = 6$



c) $2x - 4y = 8$ using x-int/y-int

x-int ($y=0$)
 $2x - 4(0) = 8$
 $2x = 8$
 $x\text{-int} = 4$

y-int ($x=0$)
 $2(0) - 4y = 8$
 $-4y = 8$
 $y\text{-int} = -2$



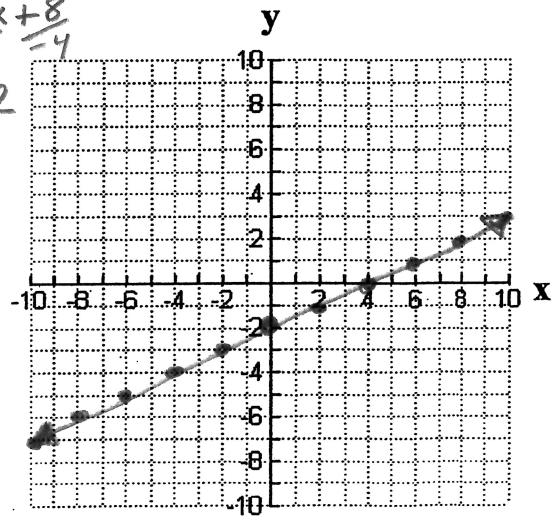
d) $2x - 4y = 8$ by changing to $y = mx + b$ form

$-4y = \frac{-2x + 8}{-4}$

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

$m = \frac{1}{2}$

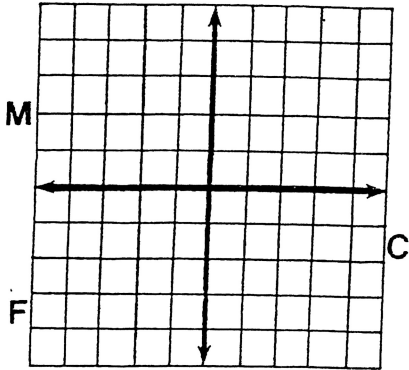
$b = -2$



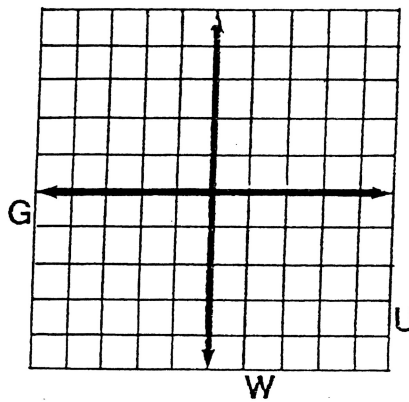
Why Did Miss Muffet Need A Road Map?

Graph any equation below. (Let each space along the axes represent 1 unit.) The graph, if extended, will cross a letter. Look for this letter in the string of letters near the bottom of the page and CROSS IT OUT each time it appears. When you finish, write the letters that have NOT been crossed out in the rectangle at the bottom of the page.

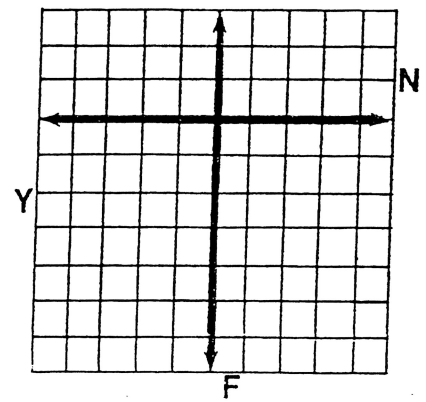
① $2x + 3y = 6$



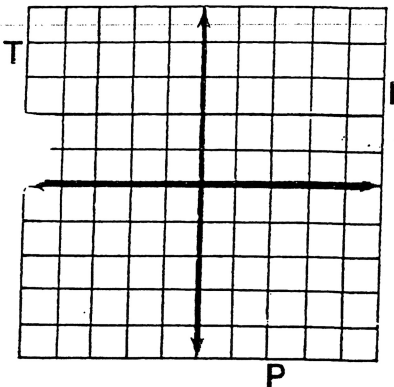
② $-x + 2y = 4$



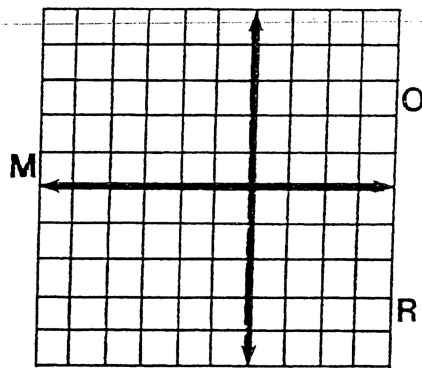
③ $3x + y = -6$



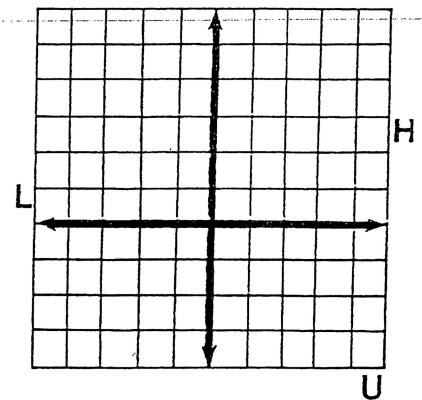
④ $4x - 3y = 12$



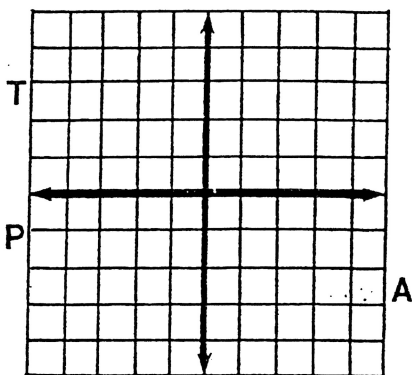
⑤ $-3x - 5y = 15$



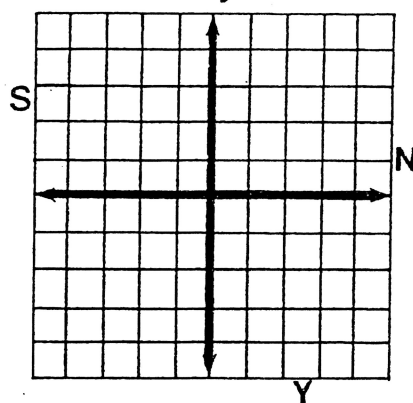
⑥ $2x + y = 5$



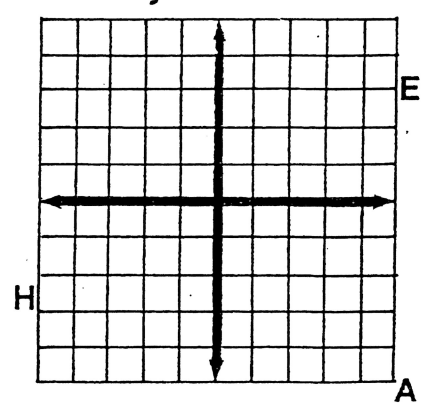
⑦ $x - 2y = -3$



⑧ $-3x + 5y = -10$



⑨ $x + y = 0$



USHAPNELAGONFSANTMCHIMEAPCRAWNGIFPHEANIYUN

ANSWER:

$$5. \quad -3x - 5y = 15$$

x-int (y=0)

$$-3x - 5(0) = 15$$

$$\frac{-3x}{-3} = \frac{15}{-3}$$

$$x\text{-int} = -5$$

y-int (x=0)

$$-3(0) - 5y = 15$$

$$\frac{-5y}{-5} = \frac{15}{-5}$$

$$y\text{-int} = -3$$

