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The Standard Form of a Line

The standard form of a linear equation is $Ax + By = C$, where A, B, and C are real numbers and not both zero.

Although standard form isn't quite as nice as slope-intercept or point-slope for graphing, we can use it to find x- and y-intercepts in a relatively simple procedure.

Example: $4x + 8y = 16$...

Plug in 0 for x
$4(0) + 8y = 16$
$8y = 16$
$y = 2$

This is our x-intercept (0, 2)

Plug in 0 for y
$4x + 8(0) = 16$
$4x = 16$
$x = 4$

This is our y-intercept (4, 0)

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Find the x- and y-intercepts of the graph of each equation.

1) $4x - 5y = 40$

2) $-2x + 9y = 10$

on your own...

3) $-2x - 6y = 12$

4) $3x + y = -16.5$

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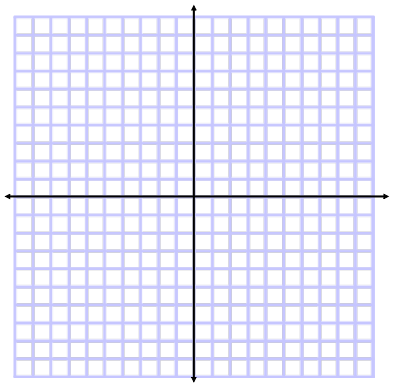
Graph the line using intercepts.

5) $5x - 2y = 10$



on your own...

6) $-4x - 8y = -32$

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Graph the line.

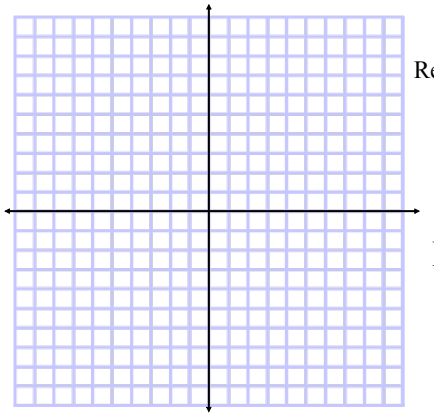
7) $y = -4$

8) $x = 5$

on your own...

9) $x = -8$

10) $y = 0$



Remember this?

HOY VUX

slope = (zero) horizontal — $y = a$ number

slope = undefined vertical — $x = a$ number

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Write the equation in standard form using integers.

11) $y = \frac{7}{3}x - 2$

12) $y + 8 = 3(x - 5)$

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on your own...

Write the equation in standard form using integers.

13) $y = \frac{1}{5}x + \frac{2}{5}$

14) $y - 3 = -2(x - 5)$