Algebra 1   4.3

Write equations of lines in point-slope form
Write linear equations in different forms

slope-intercept form $y = mx + B$
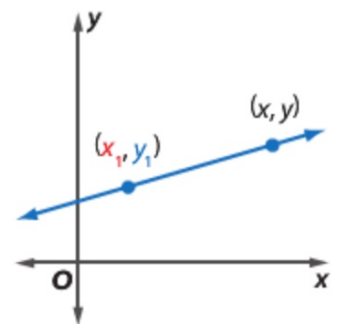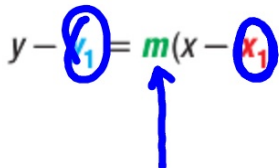point-slope form $y - y_1 = m(x - x_1)$
standard form $Ax + By = C$
speed dating

KeyConcept Point-Slope Form

Words

The linear equation $y - y_1 = m(x - x_1)$ is written in point-slope form, where (x_1, y_1) is a given point on a nonvertical line and m is the slope of the line.

Symbols

$$y - y_1 = m(x - x_1)$$

Write the equation of the line passing through (3, -2) and (5,1). $m = \dfrac{3}{2}$

a) point-slope form

$y + 2 = \dfrac{3}{2}(x - 3)$

$y = \dfrac{3}{2}x - \dfrac{13}{2}$

b) slope-intercept form

$y = \dfrac{3}{2}5 + B$ $1 = \dfrac{13}{2} + B$

$-\dfrac{18}{2} \quad -\dfrac{15}{2}$

$-6\dfrac{1}{2}$

c) standard form

In order to first pt ⊙

$2 \cdot y = 2 \cdot \dfrac{3}{2}x - 2 \cdot \dfrac{13}{2}$

$2y = 3x - 13$

$-3x \qquad -3x$

$\overline{}$

$\dfrac{-3x + 2y}{-1} = \dfrac{-13}{-1}$

$3x - 2y = 13$

$2y = 3x - 13$

$-2y \qquad -2y$

$13 = 3x - 2y \quad \overset{-13}{\underset{+13}{}}$
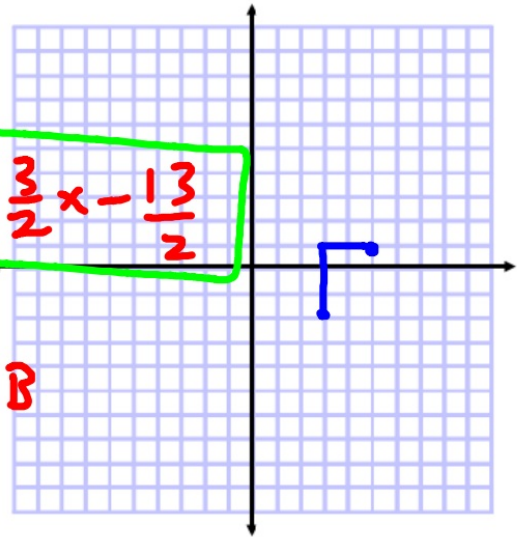
Write the equation of the line passing through (2, -6) and (-1, 3).

$y - y =$
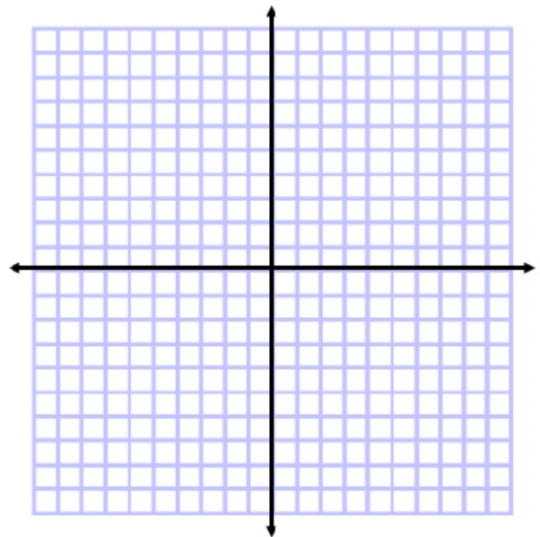
a) point-slope form

$y = mx + B$
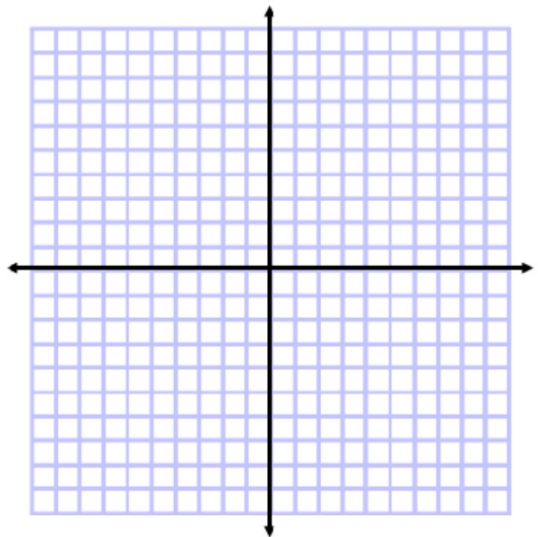
b) slope-intercept form

Ax

c) standard form

Write the equation of the line passing through (-2, -8) and (-5, 3).

a) point-slope form

b) slope-intercept form

c) standard form

iCR due today