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

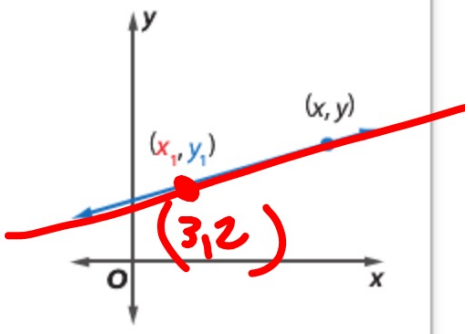
standard form $Ax + By = C$

speed dating

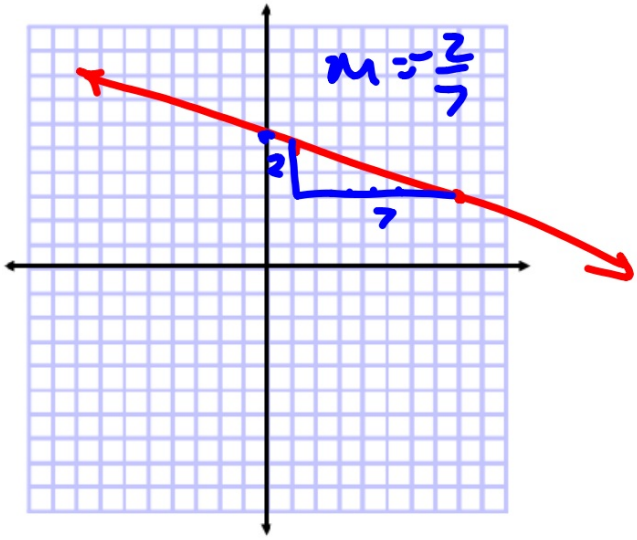
KeyConcept Point-Slope Form

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 $y - 2 = m(x - 3)$



Write the equation of the line passing through (1,5) and (8,3).



a) point-slope form

$y - 5 = -\frac{2}{7}(x - 1)$

b) slope-intercept form

$y = -\frac{2}{7}x + \frac{37}{7}$

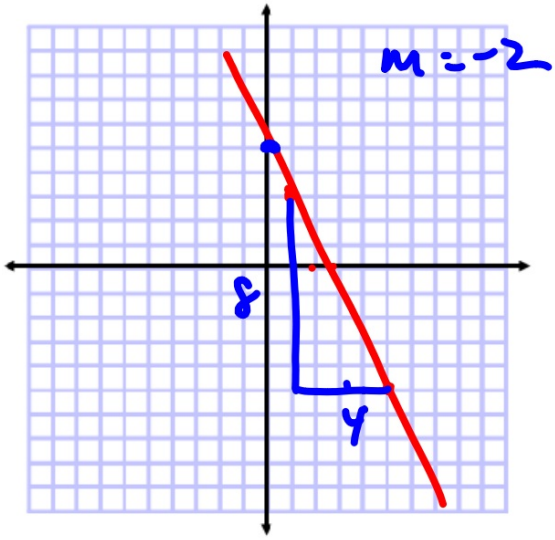
c) standard form

$\frac{2}{7}x + y = \frac{37}{7}$

$2x + 7y = 37$

$m = \frac{-8}{4} = -2$

Write the equation of the line passing through (1,3) and (5,-5).



a) point-slope form

$y - 3 = -2(x - 1)$

b) slope-intercept form

$y = -2x + 5$

c) standard form

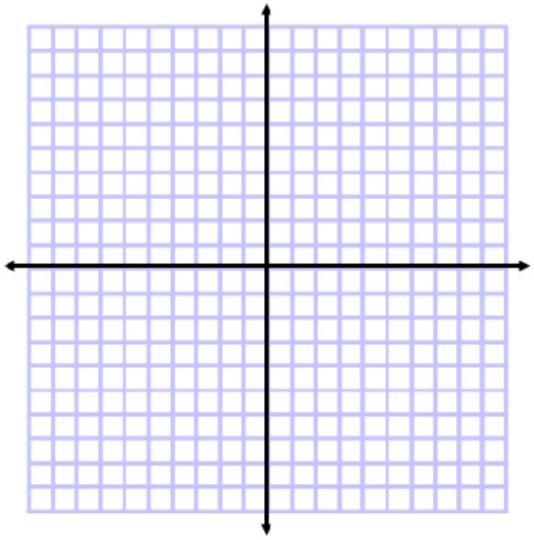
$2x + y = 5$

Write the equation of the line passing through (0, 6) and (8,-2).

a) point-slope form

b) slope-intercept form

c) standard form



$x = 4$

$y = 3$

$y = mx + B$