

Algebra 1 4.3

Write equations of lines in point-slope form

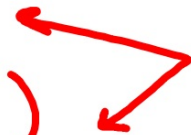
Write linear equations in different forms

slope-intercept form

point-slope form

standard form

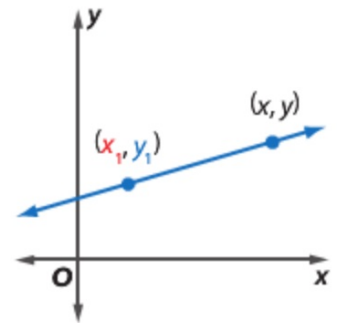
speed dating

$$y = mx + B$$
$$y - y_1 = m(x - x_1)$$
$$Ax + By = C$$


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



$$m = -\frac{2}{7}$$

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

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

a) point-slope form

$$y = mx + b$$
$$3 = -\frac{2}{7} \cdot 8 + b$$

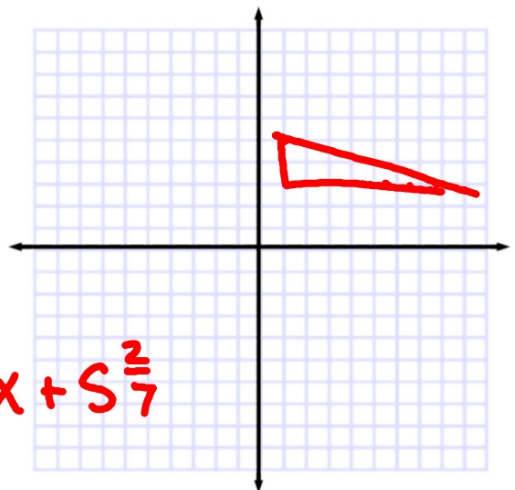
b) slope-intercept form

$$3 = -2\frac{2}{7} + b$$

c) standard form

$$5\frac{2}{7} = b$$

$$y = -\frac{2}{7}x + 5\frac{2}{7}$$



Standard form

1. • In order $Ax + By = C$
2. • Only integers (no fractions, no decimals)
3. • No GCF \div out
4. • First term positive x^{-1} $2x + 5y = 7$

$$\frac{3x}{3} - \frac{6y}{3} = \frac{12}{3}$$
$$x - 2y = 4$$

$$2. \quad 2x^2 - \frac{1}{2}y^2 = 6$$

$$4x - y = 12$$

$$A = 4$$
$$B = -1$$
$$C = 12$$

$$3. \frac{1}{3}x + 2y = 5$$

$$x + 6y = 15$$

$$\overset{-1}{-}2x + \overset{-1}{-}3y = \overset{-1}{-}8$$

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$$2x - 3y = -8$$

