

7.2 General Form

General Form of an equation:

$$Ax + By + C = 0$$

For example: $7x - 2y + 3 = 0$

A =

B =

C =

Rules for General Form:

1. Proper order of terms
2. The first term (Ax) must be positive
3. No fractions or decimals
4. In lowest terms

Convert the following linear equations into general form:

a) $-3x + 2y - 5 = 0$

b) $3y + 2x = 4$

c) $2.5x - 3y + 0.1 = 0$

d) $3y = 2x$

Guidelines for Converting to general form ($Ax + By + C = 0$)

1. Eliminate fractions by multiplying each term by the denominator's LCM
2. Move all terms to one side of the equation in the proper order. (Set = 0)
3. Make sure that the x-term is positive.

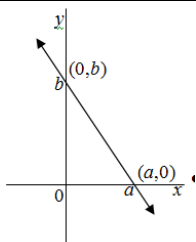
a) $y = 5x - 1$

b) $y = -\frac{3}{4}x + 3$

c) $y = \frac{x}{4} + \frac{1}{6}$

d) $y = 0.4x - 0.75$

Finding intercepts:



To find the x-intercept substitute _____ and solve for x.

To find the y-intercept substitute _____ and solve for y.

Find the x and y intercepts of the following equations.

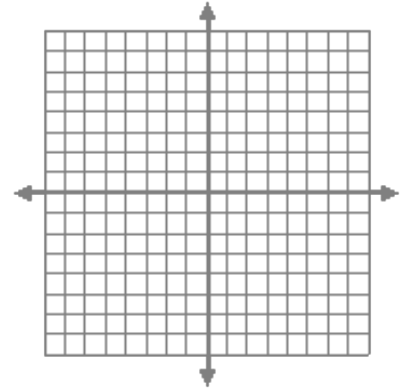
a) $2x + y - 8 = 0$

b) $y = 3$

c) $x = -4$

For the linear equation, find the intercepts and use them to graph the line

$$3x - 4y - 12 = 0$$



3. Write the equation of a line **in general form** given....

a) An x -intercept of 1 and no y -intercept

b) A y -intercept of -2 and no x -intercept.

c) A vertical line passing through (-5, 1)

In summary:

Verticals lines $x + k = 0$ and Horizontal lines $y + k = 0$

Interpreting Intercepts:

Brooke wants to save \$336 to decorate her bedroom. She has two part-time jobs. On weekends, she works as a snowboard instructor and earns \$12 per hour. On weekdays she earns \$16 per hour working as a high-school tutor.

1. Write an equation to represent the number of hours Brooke needs to work as a snowboard instructor, S , and as a tutor, T .
2. What is the S -intercept of a graph of the equation? What does it represent?
3. What would the T -intercept be? What does it represent?
4. Suppose Brooke works 8 h as a snowboard instructor. How many hours will she need to work as a tutor?