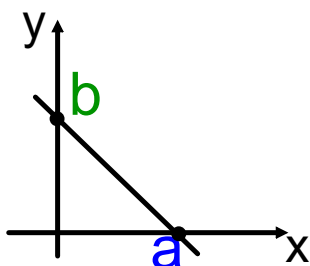## Symmetric Form of the Equation of a Line

The symmetric form of the equation of a straight line *not passing through the origin* is:

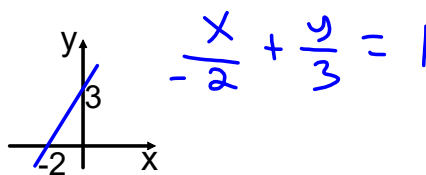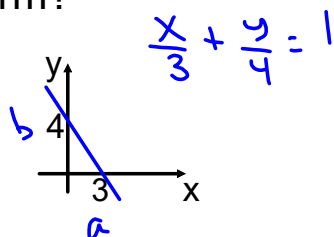$$\frac{x}{a} + \frac{y}{b} = 1$$

where:

a is the x-intercept and b is the y-intercept.

Examples:

1)What is the equation of the line in symmetric form?

$$\frac{x}{3} + \frac{y}{4} = 1$$

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

2) Change the following into the symmetric form:

x + 2y - 2 = 0

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

$$\frac{x}{2} + \frac{y}{1} = 1$$

$$x + 2y = 2 \quad \times \begin{array}{c|c} x & y \\ \hline 0 & 1 \\ 2 & 0 \end{array}$$

$$\frac{x}{2} + \frac{y}{1} = 1$$

3) Determine the x and y intercepts.

a) $\frac{x}{5} + \frac{y}{3} = 1$

x = 5
y = 3

b) $\frac{-x}{2} + \frac{y}{6} = 1$

x = -2
y = 6

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

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

x = 3/2
y = 5/3

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