

Equations with two variables

$$9x+2y=15$$

$$y=x^2-4$$

$$2x-y>6$$

solutions to these equations are not a single number because there are two variables.

solutions come in pairs with a value for x and a value for y . For each x value there is generally only one y value. Rather than always writing $x=\#, y=\#$. The convention is to use ordered pairs to represent the solutions.

ordered pairs: (x,y)

Finding solutions

$$2x + 3y = 12$$

$$(0, 4)$$

$$x = 0$$

$$2 \cdot 0 + 3y = 12$$

$$\frac{3y = 12}{3}$$

$$y = 4$$

$$(6, 0)$$

$$y = 0$$

$$\frac{2x = 12}{2}$$

$$x = 6$$

$$(4, \frac{4}{3})$$

$$x = 4$$

$$2 \cdot 4 + 3y = 12$$

$$8 + 3y = 12$$

$$\frac{-8}{-8} \quad \frac{-8}{-8}$$

$$3y = 4$$

$$y = \frac{4}{3}$$

$$(\frac{1}{2}, \frac{11}{3})$$

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

$$2(\frac{1}{2}) + 3y = 12$$

$$1 + 3y = 12$$

$$3y = 11$$

$$y = \frac{11}{3}$$

your turn!

$$-3x + \frac{1}{2}y = 6$$

$$\left(-\frac{1}{3}, -\right) \quad \left(-, -4\right) \quad \left(0, \right)$$

Homework.
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ADV. P. 105 # 21-33 x 3