Algebra 1

Chapter 5
Section 5-5

Multiple Unknown Quantities

A pair of siblings has to sell a total of 175 tickets for a fundraiser. Tickets come in booklets of 5. If one sibling sells x number of booklets and the other sells y number of booklets, write an equation for the total amount of tickets sold .

$$5x + 5y = 175$$

Standard Form

A linear equation in standard form puts both variables on the same side of the equation.

Example:

5x - 3y = 30

Benefit of Standard Form:
Standard form makes it easier to find both intercepts.

X-intercept

The y-intercept is where the graph of a line crosses the y-axis (vertical).

Similarly, the x-intercept is where the graph of a line crosses the x-axis (horizontal).

Finding the x-intercept and the y-intercept in Standard Form

$6x - 3y = 12$

$6x - 13y = 1$

$5x + 2y = -20$

$-20x + 25y = -200$

$x - y = 43$

(0, -4) and (2, 0)
(0, -10) and (-4, 0)
(0, -43) and (43, 0)

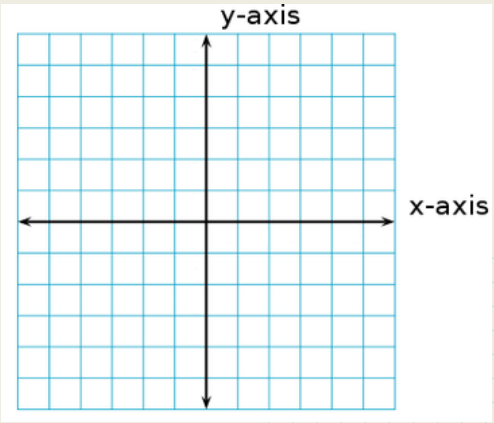
(0, -1/13) and (1/6, 0)
(0, -8) and (10, 0)

Graphing Using Standard Form

$3x - 4y = 12$

$-4x - 5y = 20$

$4x + y = 4$



Word Problem

Sandy has $10 to spend at the Candy Shoppe. She wants to buy chocolate covered raisins (costing $0.50 per ounce) and/or peanut brittle (costing $.75 per ounce). Write an equation for the relationship between how much of each candy she can buy.

How much peanut brittle she can buy if she only buys no raisins.

How much chocolate covered raisins can she buy if she buys no peanut brittle?

How much peanut brittle can she buy if she buys six pounds of chocolate covered raisins?

Horizontal and Vertical Lines

horizontal	vertical
h rotated upside down is ɥ (looks like y)	two v's put together is X
y = a number	x = a number

Graphing Horizontal and Vertical Lines

What is the equation of the line?