

Linear Equations

$$4x - 5y = 16$$

$$x = 10$$

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

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

Non-Linear Equations

$$2x + 6y^2 = -25$$

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

$$x + xy = -\frac{5}{2}$$

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

A linear function is any equation that can be written in the form: _____

State whether each function is linear. Write yes or no & explain why.

a) $f(x) = 8 - \frac{3}{4}x$ _____

b) $f(x) = \frac{2}{x}$ _____

c) $g(x, y) = 3xy - 4$ _____

Standard Form of a Linear Equation

$$Ax + By = C$$

A, B & C are integers.

A, B & C have greatest common factor of One.

A is not negative.

A & B are not both zero.

Write each equation in standard form. Identify A, B & C

Ex: $-\frac{3}{4}y = 2x + 11$

1) $\frac{6x-1}{3} = 4y$

Graphing Using Intercepts

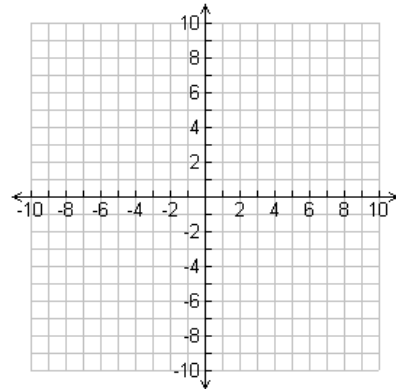
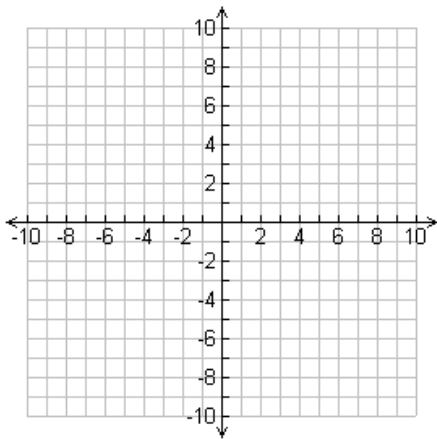
X intercept: _____

Y intercept: _____

Find the x & y intercepts for the x & y intercepts and graph the function using those points.

Ex: $6y = 3x + 24$

2) $2x + 3y + 12 = 0$



Paul charges people \$25 to test the air quality in their homes. The device he uses to test air quality cost him \$500. Write an equation that describes Paul's net profit as a function of the number of clients he gets.

Rewrite the equation in standard form.

Find the x & y intercepts and graph.

What do the intercepts mean in the context of this problem?

