

Notes 2.2 - Linear Equations Algebra 2 Trig G

Name Key
Date _____ Hour _____

A linear equation has no operations other than addition, subtraction, or multiplication of a variable by a constant.

Part 1: State whether the function is a linear function.

- a) $g(x) = 2x - 5$ yes
- b) $p(x) = x^3 + 2$ no (x·x·x)
- c) $t(x) = 4 + 7x$ yes
- d) $g(x, y) = 3xy$ no

Part II: Evaluate a linear function.

The linear function $f(C) = 1.8C + 32$ can be used to find the number of degrees Fahrenheit (f) that are equivalent to a given number of degrees Celsius (C).

- a) On the Celsius scale, normal body temperature is 37°C . What is it in degrees Fahrenheit?

$$f(37) = 1.8(37) + 32 = 66.6 + 32 = 98.6^\circ\text{F}$$

- b) There are 100 Celsius degrees between the freezing and boiling points of water and 180 Fahrenheit degrees between these two points. How many Fahrenheit degrees equal 1 Celsius degree?

$$\frac{100^\circ\text{C}}{180^\circ\text{F}} = \frac{1^\circ\text{C}}{x} \quad 100x = 180 \quad 10x = 18 \quad x = 1.8^\circ\text{F}$$

Part III: Write each equation in standard form ($Ax + By = C$) where A must be a positive, whole number! Identify A, B, and C.

a) $y = 3x - 9$

$$(-3x + y = -9) \times 1$$

$$3x - y = 9$$

A: 3
B: -1
C: 9

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

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

$$3 = 2x + 6y$$

$$2x + 6y = 3$$

A: 2
B: 6
C: 3

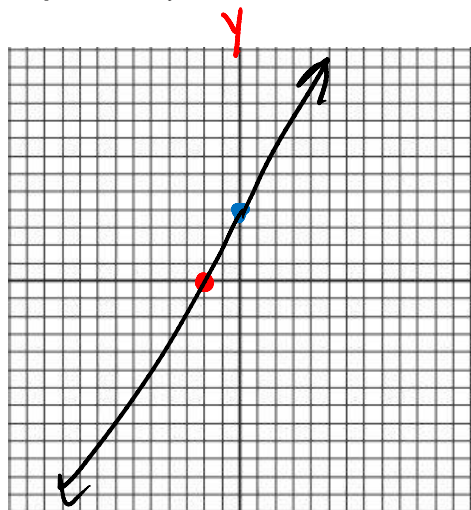
c) $3x - 9y + 6 = 0$

$$3x - 9y = -6$$

A: 3
B: -9
C: -6

Part IV: Find the x-intercept and y-intercept and graph the equation.

a) $-2x + y - 4 = 0$



The x-intercept is the value of x when $y = 0$

$$-2x + 0 - 4 = 0$$

$$-2x - 4 = 0$$

$$-2x = 4$$

$$\boxed{x = -2}$$

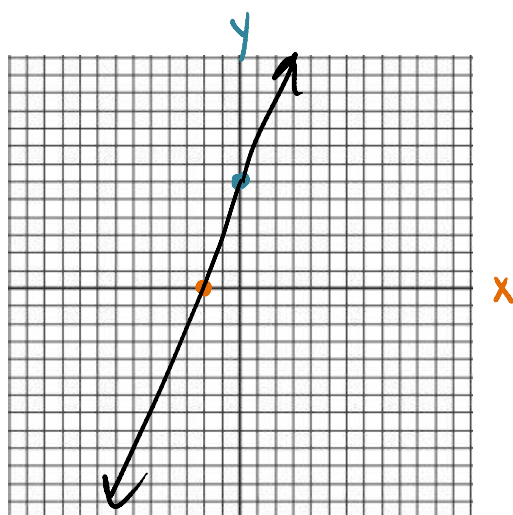
The y-intercept is the value of y when $x = 0$

$$-2(0) + y - 4 = 0$$

$$y - 4 = 0$$

$$\boxed{y = 4}$$

b) $-y + 3x = -6$



x-int ($y=0$)

$$-0 + 3x = -6$$

$$3x = -6$$

$$\boxed{x = -2}$$

y-int ($x=0$)

$$-y + 3(0) = -6$$

$$-y = -6$$

$$\boxed{y = 6}$$