

Algebra lesson 8 quiz answers

Thursday, 12 December 2013

12:33 PM

Q1) Find the equation of the line if it has an x-intercept at (2,0) and y-intercept at (0,-4)

$$\text{Rise} = -4 - 0 = -4$$

$$\text{Run} = 0 - 2 = -2$$

$$m = \text{Gradient} = \frac{\text{rise}}{\text{run}} = \frac{-4}{-2} = 2$$

$$\text{Equation of line: } y = mx + c$$

$$y = 2x + c$$

$$\text{When } x = 0, y = -4$$

$$-4 = 2 \times 0 + c$$

$$c = -4$$

$$\text{Equation of line: } y = 2x - 4$$

Q2) Find the x and y intercept of the following equations

a) $y = 3x + 1$

x-intercept occurs when $y=0$

$$0 = 3x + 1$$

$$-1 = 3x$$

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

$$\text{x-intercept: } \left(-\frac{1}{3}, 0\right)$$

y-intercept occurs when $x=0$

$$y = 3 \times 0 + 1$$

$$y = 1$$

y-intercept: (0,1)

b) $y = -2x - 3$

x-intercept occurs when $y=0$

$$0 = -2x - 3$$

$$3 = -2x$$

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

$$\text{x-intercept: } \left(-\frac{3}{2}, 0\right)$$

y-intercept occurs when $x=0$

$$y = -2 \times 0 - 3$$

$$y = -3$$

y-intercept: (0, -3)

c) $2x - y - 6 = 0$

x-int occurs when $y=0$

$$2x - 0 - 6 = 0$$

$$2x - 6 = 0$$

$$2x = 6$$

$$x = \frac{6}{2} = 3$$

$$\text{x-int: } (3, 0)$$

y-int occurs when $x=0$

$$2 \times 0 - y - 6 = 0$$

$$-y - 6 = 0$$

$$-y = 6$$

$$y = -6$$

y-int: (0, -6)