

Name: Solutions

Functions 11 – U3 Quiz: Zeros of Quadratic Functions

K ___/8 C ___/1

(Formative)

1. What is a zero of a quadratic function? You can answer with words or with a picture.

C ___/1

A zero is an x -value where the function value (the y -value) is zero. 

2. Determine the zero(s) (if they exist) by converting the function to factored form.

K ___/3

$$f(x) = x^2 - 7x - 30$$

$$f(x) = 0$$

x	$+$
-30	-7
-10	$+3$

$$\Rightarrow x^2 - 7x - 30 = 0$$

$$\Rightarrow (x - 10)(x + 3) = 0$$

$$\Rightarrow x = 10 \text{ or } x = -3$$

3. Using the quadratic formula determine the zero(s) (if they exist) of the given function.

K ___/3

$$g(x) = 4x^2 - 12x + 9$$

$$a = 4 \quad b = -12 \quad c = 9$$

$$\text{Q.F.: } x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$= \frac{-(-12) \pm \sqrt{(-12)^2 - 4(4)(9)}}{2(4)}$$

$$= \frac{12 \pm \sqrt{0}}{8} = \frac{12}{8} = \frac{3}{2} \quad (\text{just one zero})$$

4. How many zeros does $p(x) = -3x^2 + x + 5$ have? Use the discriminant.

K ___/2

discriminant

$$b^2 - 4ac = (1)^2 - 4(-3)(5)$$

$$= 1 + 60 = 61 > 0 \quad \therefore 2 \text{ zeros}$$