A∞Ω
MATH@TD

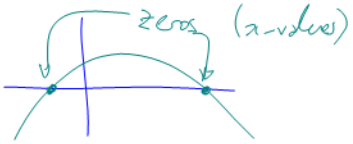
Name: _____

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**

where the quadratic crosses the x-axis



2. Determine the zero(s) (if they exist) by converting the function to factored form. **K ___/3**

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

$-30 \mid -7$ $\quad -10, 3$

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

Set to zero

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

$\therefore x = 10$ OR $x = -3$

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

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

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

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

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

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

$= \frac{12 \pm \sqrt{144-144}}{8}$

$= \frac{12}{8}$

$= \frac{3}{2}$

$\therefore$ There is one zero at $x = \frac{3}{2}$ (OR 1.5)

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

discriminant

$a = -3 \quad b = 1 \quad c = 5$

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

$= 1 + 60$

$= 61 > 0$ $\therefore$ 2 zeros