

3/13 Algebra I - Downing
Go over HW

Lesson 5: Day 2

Write a quadratic function in standard form whose graph satisfies the given conditions:

Ex) vertex $(-3, 4)$ ("a" can equal 1)

* start with Vertex Form $y = a(x-h)^2 + k$

$$y = 1(x+3)^2 + 4 \quad (x+3)(x+3)$$

$$y = (x^2 + 6x + 9) + 4 \quad x^2 + 3x + 3x + 9$$

$$y = x^2 + 6x + 13 \quad x^2 + 6x + 9$$

Ex) Passes thru: $(-9, 0)$ $(-2, 0)$ and $(-4, 20)$

x-intercepts
* use intercept form

$$y = a(x-p)(x-q) \quad y = -2(x+9)(x+2)$$

$$y = a(x+9)(x+2) \quad y = -2(x^2 + 2x + 9x + 18)$$

$$20 = a \underset{(5)}{(-4+9)} \underset{(-2)}{(-4+2)} \quad y = -2(x^2 + 11x + 18)$$

$$\frac{20}{-10} = \frac{-10a}{-10}$$

$$-2 = a$$

$$y = -2x^2 - 22x - 36$$

Ex) Passes thru: $(-5, 0)$ $(4, 0)$ and $(3, -16)$

x-int.
* use intercept form

$$y = a(x-p)(x-q) \quad y = 2(x^2 + x - 20)$$

$$-16 = a \underset{(8)}{(3+5)} \underset{(-1)}{(3-4)} \quad y = 2x^2 + 2x - 40$$

$$\frac{-16}{-8} = \frac{-8a}{-8}$$

$$2 = a$$

Ex) Find the zeros $g(x) = (x-1)(x^2-16)$
 $(x-1)(x+4)(x-4)$
 $x = 1, -4, 4$
 $(1,0)(-4,0)(4,0)$

Ex) $f(x) = 3x^2 - 12x + 12$
 $3(x^2 - 4x + 4)$
 $3(x-2)(x-2)$
 $x = 2$
 $(2,0)$

$\begin{array}{r} 4 \\ -2 \overline{) -2} \end{array}$

HW - Unit 7 Test Review WS - Key on website

WS - 8.5 + Graph Paper # 2, 4, 6, 8, 10, 12, 14, 15, 17, 19