

Algebra 1

Our Goal: To finish reviewing for the Unit 8 test

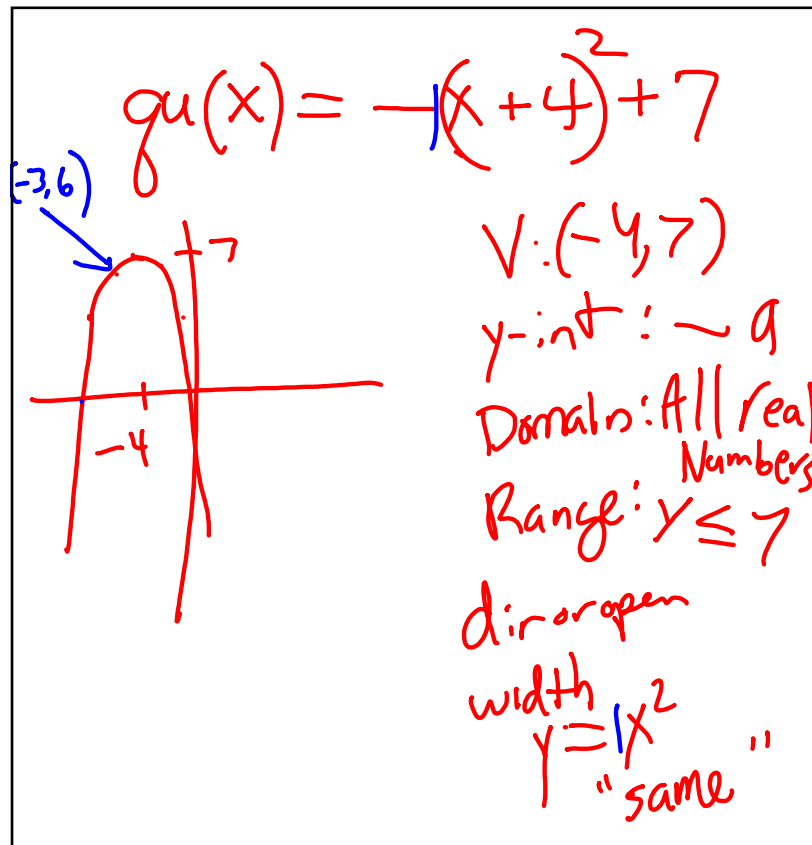
Warm Up: Review topics

Today's Homework:

- Online practice test
- There is i-ready due this week

Previous Homework

- 8.1-8.6 Chapter Review, p.470-472: 1-30
- i-Ready due Friday



$$Y = (x-1)(x+5)$$

$$(-2-1)(-2+5)$$

$$\frac{1+(-5)}{2}$$

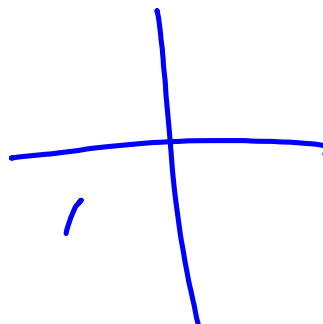
Zeros: 1, -5

V: (-2, -9)

incr.: $x > -2$

decr.: $x < -2$

sketch



$$f(x) = x^2 + 3x - 18$$

zeros: -6, 3

$$0 = x^2 + 3x - 18$$

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

$$(x+6) = 0 \text{ or } (x-3) = 0$$

Wrt. of parabola

vertex: $(2, 4)$

thru: $(1, 2)$

$$y = -2(x-2)^2 + 4$$

$$2 = a(1-2)^2 + 4$$

$$2 = a(-1)^2 + 4$$

$$2 = a + 4$$

$$-4 \quad -4$$

$$-2 = a$$

Wrt. eq. quad

zeros 4 and 8

thru $(5, 2)$

$$y = -\frac{2}{3}(x-4)(x-8)$$

$$y = a(x-b)(x-c)$$

x	y
-1	4
0	2 (vertex)
1	4

x

$y = 2(x)^2 + 2$

$y = a(x-h)^2 + k$

x	y
-1	12
0	3
1	3/4

$y = a(b^x)$

$y = a\left(\frac{1}{4}\right)^x$

$y = 3\left(\frac{1}{4}\right)^x$

x	y
1	10
2	20
3	40

$$y = a(2)^x$$

x	y
20	10 ✓
21	5
22	2.5

$$y = a\left(\frac{1}{2}\right)^x$$

$$20 = a\left(\frac{1}{2}\right)^{10}$$

$$20 = a\left(\frac{1}{1024}\right)$$

$$a = 1024(20)$$

$$a = 20,480$$

Chapter 8 Test Topics

- Characteristics of a quadratic function
 - > Vertex
 - > Equation of axis of symmetry
 - > Interval where increasing / decreasing
 - > y-intercept
 - > x-intercept(s) or zeros
 - > minimum or maximum value
 - > Domain / Range
 - > Sketching the graph
- Even and odd functions
- Finding the zeros and vertex of a parabola
- Writing the equation of a quadratic function

$$f(x) = -2(x - 1)^2 + 6$$

vertex: (,)

equation of axis of symmetry:

interval where increasing:

interval where decreasing:

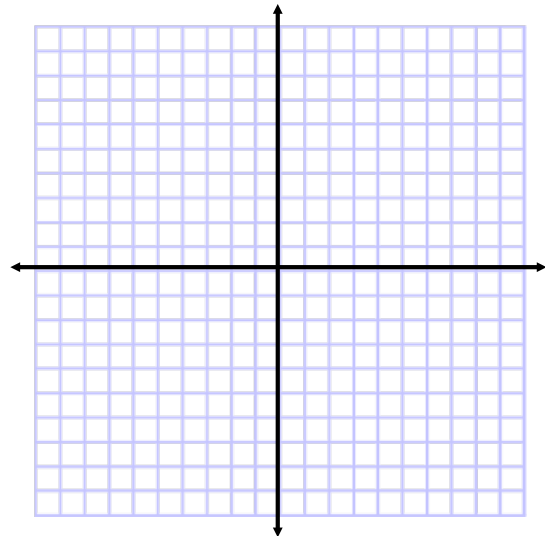
domain:

range:

minimum or maximum

min/max value:

sketch the graph



Is the function even, odd, or neither?

$$f(x) = x + 9$$

Is the function even, odd, or neither?

$$g(x) = x^3 + 3x$$

Write the equation of the quadratic function with a vertex of $(-2, 4)$ that passes through $(0, 2)$

Write the equation of the quadratic function with x-intercepts of -1 and 7 that passes through $(3, 8)$

domain:

range:

zeros:

width compared to $y=x^2$
narrower / same / wider

equation of the function in vertex form:

