

From Friday

Name _____
Algebra II

Date _____
Period _____

Review Graphing Quadratics

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

$$-4(x-0)^2 + 3$$

$$1) \quad y = -3(x-1)^2 + 6$$

Vertex: $(1, 6)$
Stretched, compressed or neither?
By what factor? 3
Opens up or down? down

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

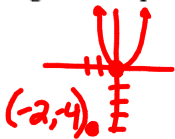
Vertex: $(0, 3)$
Stretched, compressed or neither?
By what factor? 4
Opens up or down? down

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

Vertex: $(-4, 0)$
Stretched, compressed or neither?
By what factor? 2
Opens up or down? up

Write the new function.

4) Starting with the parent function $y = x^2$, reflect the function across the x-axis and translate the function down 4 and left 2.

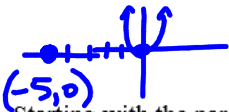


a is neg.

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

$$y = -(x-2)^2 - 4 \quad \text{or} \quad y = -(x+2)^2 - 4$$

5) Starting with the parent function $y = x^2$, compress the function by a factor of 2 and translate the function left 5.



$$y = 2(x+5)^2 + 0 \quad \text{or} \quad y = 2(x+5)^2$$

6) Starting with the parent function $y = x^2$, stretch the function by a factor of 4 and reflect it across the x-axis.

$$y = -\frac{1}{4}(x-0)^2 + 0 \quad \text{or} \quad y = -\frac{1}{4}x^2$$

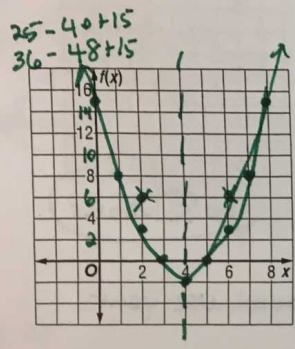
Graphing Quadratics

Graph and list the following for # 1-3. (You may make a table to help you.)

1. $f(x) = x^2 - 8x + 15$
 y-int 15
 axis of sym $x = 4$
 vertex $(4, -1)$

1. $f(x) = x^2 - 8x + 15$
 $\frac{-8}{2 \cdot 1} = -4$ $4^2 - 8 \cdot 4 + 15 = 16 - 32 + 15 = -1$

x	4
5	0
6	3
7	8

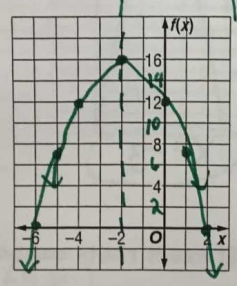


Max or min? min
 At -1

2. $f(x) = -x^2 - 4x + 12$
 y-int 12
 axis of sym $x = -2$
 vertex $(-2, 16)$

2. $f(x) = -x^2 - 4x + 12$
 $\frac{-4}{2 \cdot -1} = -\frac{4}{-2} = -2$
 $-4 + 8 + 12 = 16$

x	4
-2	16
1	7

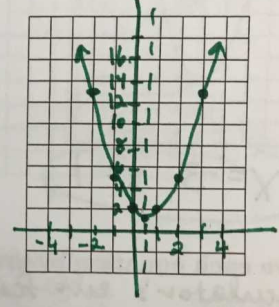


Max or min? max
 At 16

3. $f(x) = 2x^2 - 2x + 1$
 y-int 1
 axis of sym $x = \frac{1}{2}$
 vertex $(0.5, 0.5)$

3. $f(x) = 2x^2 - 2x + 1$
 $\frac{-2}{2 \cdot 2} = \frac{-2}{4} = -\frac{1}{2}$

x	4
0.5	0.5
1	0
2	5
3	13
0	1
-1	5
-2	13



Max or min? min
 At 0.5