

NAME: _____ PERIOD: _____ DATE: _____

Homework Problem Set

For each quadratic equation below, describe the transformations from the parent graph of $y = x^2$.

1. $y = (x - 3)^2$

- Translate right 3

2. $y = 2(x - 3)^2$

- Translate right 3
- Vertical stretch of 2

3. $y = -2(x - 3)^2$

- Translate right 3
- Vertical stretch of 2
- Reflect over x-axis

4. $y = -2(x - 3)^2 + 4$

- Translate right 3
- Vertical stretch of 2
- Reflect over x-axis
- Translate up 4

5. How were these four equations related? How could breaking them down this way help you graph the final equation?

Each Equation builds on the previous one.

6. $y = (x + 1)^2$

- Translate left 1

7. $y = 0.5(x + 1)^2$

- Translate left 1
- Vertical shrink of 0.5

8. $y = 0.5(x + 1)^2 - 2$

- Translate left 1
- Vertical shrink of 0.5
- Translate down 2

9. How were these three equations related? How could breaking them down this way help you graph the final equation?

Each equation builds on the previous one.

10. The table of values below is for a quadratic function. Identify the vertex, x-intercept(s) and y-intercept. Explain how you know.

x	y
3	12
-1	-4
1	0
2	5
-2	-3
0	-3
-3	0

x	y
-3	0
-2	-3
-1	-4
0	-3
1	0
2	5
3	12

VERTEX (-1, 4)

- Look for where y-values repeat to identify vertex.

X-intercepts

(-3, 0) (1, 0)

- Look for where y=0

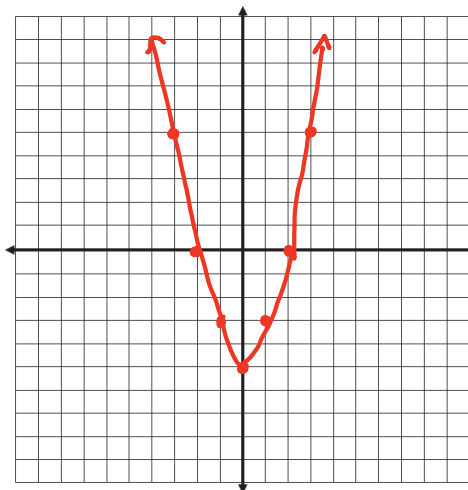
y-intercepts

- Look for where x=0

11. The table of values below is for a quadratic function. Determine the missing values. Then graph the parabola.

x	y
-3	5
-2	0
-1	-3
0	-4
1	-3
2	0
3	5

use symmetry



12. Use the table of values from Problem 11 to identify the vertex, x-intercept(s) and y-intercept. Explain how you know.

VERTEX
(0, -4)

X-intercepts
(-2, 0) (2, 0)

y-intercept
(0, -4)