Name: _____

Period: _____

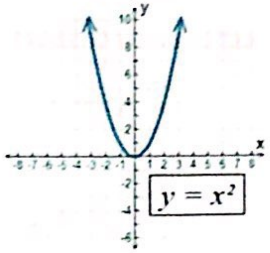
Final Reivew Parabolas Part 2:

Steps to determine the y-intercept:	Example:
1) Plug in 0 for all X's and simplify 2) Write as a point: (0, y)	Find the y-intercept: $f(x) = 3x^2 + 3x - 11$ 1) $3(0)^2 + 3(0) - 11$ $= -11$ 2) $(0, -11)$

Steps to determine the x-intercept(s):	Example:
1) Plug in 0 for f(x) 2) Solve for x. 3) Write as a point: (x, 0)	Find the x-intercept(s): $f(x) = 5x - 10$ 1) $0 = 5x - 10$ 2) $2 = x$ 3) $(2, 0)$

Translations on Parabolas:

All Translations begin from the Parent Graph:



1) If there is a number being **added** in the parenthesis, the parabola is moving **Left.**

2) If there is a number being **subtracted** in the parenthesis, the parabola is moving **Right.**

3) If there is a number being **added outside of the parenthesis** then the parabola is moving **Up.**

4) If there is a number being **subtracted outside of the parenthesis** then the parabola is moving **Down.**

5) If the value of **a is negative**, that is, if x^2 is negative, (such as $-x^2$) or if there is a **negative sign in front of the parenthesis,** then the parabola opens down.

Examples:

1) **Describe the Translation(s):**

$$f(x) = (x + 15)^2$$

$$f(x) = (x + 4)^2$$

2) **Describe the Translation(s):**

$$f(x) = (x - 14)^2$$

$$f(x) = (x - 5)^2$$

3) **Describe the Translation(s):**

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

$$f(x) = (x - 3)^2 + 7$$

4) **Describe the Translation(s):**

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

$$f(x) = (x + 4)^2 - 1$$

5) **Describe the Translation(s):**

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

$$f(x) = -(x - 3)^2 + 12$$

Practice Problems:

Find the y-intercept for each Quadratic:

1) $f(x) = x^2 + 3x - 11$

2) $f(x) = -5x^2 - 3 + 5x$

3) $f(x) = (x + 1)^2$

4) $f(x) = x(x - 4) + 4$

Find the x-intercept(s) for each Function:

1) $f(x) = 5x - 5$

2) $f(x) = 24 + 12x$

3) $f(x) = (x + 1)^2$

Describe the Transformation(s) for each Quadratic:

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

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

3) $f(x) = -(x - 5)^2$

4) $f(x) = -(x + 7)^2 - 6$

Describe the Transformation and Graph:

$f(x) = (x - 4)^2 + 1$