Name: _____ Block: _____

Quadratic Equations in
Standard Form

Okay, you've played around with parabolas a little bit and hopefully you've learned what you need to learn. Let's find out…

First of all, remember that standard form looks like this: $y = a\,(x - h)^2 + k$

1) For EVERY parabola:
   - the coordinates of the vertex are (___ , ___)
   - the equation of the axis of symmetry is _____
   - the domain is _____
   - the range is either _____ or _____

B. Complete the following table:

Quadratic Function	***a***	***h* (be careful)**	***k***
$y = 5x^2$			
$y = -x^2$			
$y = \frac{1}{2}x^2 - 8$			
$y = (x - 2)^2$			
$y = -4\,(x + 6)^2 + 7$			

C. Something to know…

When a graph narrows we say that it is **"stretched in the y-direction"** or **"vertically expanded"**

When a graph widens we say that it is **"shrunk in the y-directions"** or **"vertically compressed"**

D. What effect does each of the following have on the "most basic" quadratic formula ($y = x^2$)?

1) When *h* is positive _____

2) When *h* is negative _____

3) When *k* is positive _____

4) When *k* is negative _____

5) When *a* is negative _____

6) When $a < -1$ or $a > 1$ _____

7) When $-1 < a < 1$ _____