Algebra 1: 12.7 Guided Notes   Name _____   Period _____
Solving Quadratic Equations by Completing the Square

Learning Goal:
To solve quadratic equations by completing the square.

Perfect Square Trinomials

$$x^2 + 6x + 9 \qquad\qquad x^2 - 10x + 25 \qquad\qquad x^2 + 12x + 36$$

What's the relationship between the middle and last term????

Creating a Perfect Square Trinomial

- How could you turn $x^2 + 14x$ into a perfect square trinomial?

- Divide the middle or linear term by 2. Then, square it to find the constant term. _____

- _____ is a perfect square trinomial.

Practice

- $x^2 + 20x +$ _____

- $x^2 - 4x +$ _____

- $x^2 + 5x +$ _____

Solving Quadratic Equations by Creating a Perfect Square Trinomial

Step 1:
Move the constant term to the right. Leave a space for
the new constant term.

1) $x^2 + 8x - 20 = 0$

Step 2:
Find the new constant term that completes the square
on the left side of the equation. Add that term
to both sides. Why BOTH sides?

Step 3:
Factor the left side of the perfect square trinomial.
Simplify the right side of the equation.

Step 4:
Solve using square roots.

More Practice...

2) $x^2 - 6x - 16 = 0$

3) $x^2 - 2x - 5 = 0$

4) $x^2 + 8x + 11 = 0$

5) $x^2 - 6x + 4 = 0$