Monday/Tuesday

Name:_____Date:_____ Period:_____

Completing the Square

Do Now: Complete #1-3 by multiplying. Then answer the question using complete sentences.

1. $(x+3)^2 = (x+3)(x+3) =$ _____

2. $(x-5)^2 = (x-5)(x-5) =$ _____

3. $(x+10)^2 = (x+10)(x+10) =$ _____

Explain why $(x+6)^2$ is not equal to x^2+36

So, what is:

$$x^2 - 12x + 36 = (x\_\_\ \_\_)^2$$

Completing the Square

Are the following Trinomials perfect squares?

1. $a^2 + 7a + 49$

2. $b^2 - 8b + 16$

3. $c^2 - 16c - 64$

Can you force them into being perfect squares? How would you change the bolded terms?

1. $a^2 + 7\boldsymbol{a} + 49$

2. $c^2 - 16c - 64$

Wednesday

Name:_____Date:_____ Period:_____

Completing the Square

Do Now: Fill in the blank with the correct term to make it a perfect square trinomial like

$(a+b)^2 = a^2 + 2ab + b^2$

1. $x^2 + 6x + \_\_\_\_\_$

2. $x^2 - 24x + \_\_\_\_\_$

3. $x^2 + 20x + \_\_\_\_\_$

Activity: Explain how to find the last term in a perfect square trinomial.

Example of a perfect square trinomial:

$(a+b)^2 = (a+b)(a+b) = a^2 + 2ab + b^2$

Completing the Square

Do Now: Thinking back to the last semester about square root. How would you solve the equations below? (Be careful, there are two answers)

1. $x^2 = 81$

2. $5x^2 = 80$

3. $3x^2 = 60$

What about $(x + 2)^2 = 25$

Or $(x + 1)^2 = 16$

Thursday/Friday

Name:_____Date:_____ Period:_____

Note: Fill in the blank

We need to get our equation into the form

$$(x + \_\_\_)^2 = \_\_\_\_\_^2 \pm \_\_\_\_\_ + \_\_\_\_\_$$

Let's try that with $x^2 + 10x = 11$

$$x^2 + 10x\_\_\_\_\_ = \_\_\_\_\_$$

We need to find a number, that when added to $x^2 + 10x$ will make a binomial squared

Divided 10 by 2, and square it!

$(10 \div 2)^2$=_____

And that is 25. (Add that to each side)

$$x^2 + 10x + 25 = 11 + 25$$

Factor the left side:

$$(x + 5)^2 = 36$$

Square Root each side. ($\pm$ *means positive or negative*)

$$\sqrt{(x + 5)^2 =} \pm \sqrt{36}$$
$$x + 5 = \pm 6$$

Now just subtract 5 from each side.

$$x + 5 = -6$$
$$x = -11$$

$$x + 5 = 6$$
$$x = 1$$

x = 1, -11

Completing the Square

Solve by completing the square

1) $p^2 + 14p - 38 = 0$

2) $v^2 + 6v - 59 = 0$

3) $a^2 + 14a - 51 = 0$

4) $x^2 - 12x + 11 = 0$

5) $x^2 + 6x + 8 = 0$

6) $n^2 - 2n - 3 = 0$

7) $x^2 + 14x - 15 = 0$

8) $k^2 - 12k + 23 = 0$