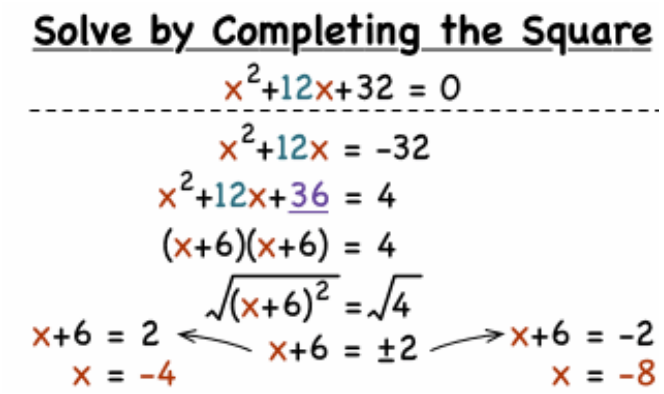
Name: _____ Date:_____

Completing the Square Continued



Model Completing the Square		
Example #1 Solve the following quadratic using completing the square. $X^2 + 14x = 15$	Example #2 Solve the following quadratic using completing the square. $X^2 + 6x = 165$	Example #3 Solve the following quadratic using completing the square. $X^2 - 8x = 9$

CFU_Think-Pair-Share	
Example #1 Solve the following quadratic using completing the square. $X^2 + 2x = 224$	Example #2 Solve the following quadratic using completing the square. $X^2 + 4x = 6$

Guided Practice_ Completing the Square when a is a perfect Square

Example #1
Solve the following quadratic using completing the square.
$4x^2 + 8x = 24$

Example # 2
Solve the following quadratic using completing the square.
$36x^2 + 36x - 7 = 0$

Example # 3
Solve the following quadratic using completing the square.
$25x^2 + 40x - 20 = 0$

CFU_ Think-Pair-Share

Example # 1
Solve the following quadratic using completing the square.
$49x^2 + 28x = -3$

Answer: _____

Example # 2
Solve the following quadratic using completing the square.
$9x^2 - 18x - 7 = 0$

Answer: _____

Independent Practice

Solve by completing the square: $x^2 + 12x + 4 =$	Solve by completing the square: $3x^2 - 12x - 7 = 0$
Solve by completing the square: $x^2 - 8x + 5 = 0$	Solve by completing the square: $4x^2 + 8x - 9 = 0$
Solve by completing the square: $-2x^2 - 12x - 9$	Solve $2x^2 + 12x + 5 = 0$ by completing the square.
Solve the following quadratic using completing the square. a. $4x^2 + 16x - 5 = 0$	Solve the following quadratic using completing the square. $2x^2 - 6x - 1 = 0$

To solve $ax^2 + bx + c = 0$ by "**completing the square**":

1) Put the variable terms are on the left of the equal sign, in standard form, and the constant term is on the right. So, get it into the form $ax^2 + bx = c$.
2) Divide by "a", so the coefficient of x^2 is 1.
3) Take one-half the coefficient of the x-term, squaring it, and adding this quantity to both sides of the equation. Basically, add $\left(\frac{b}{2}\right)^2$ to both sides.
4) Factor the Perfect Square Trinomial on the left side of the equation and simplify the right side. Remember, it always factors into $\left(x+\frac{b}{2}\right)^2$
5) Use the principle of square roots
6) Solve the remaining equation
7) Check your answer in the original equation.

Solve each equation by completing the square.

1. $x^2 - 2x - 15 = 0$

2. $x^2 + 2x = 35$

3. $2x^2 + 8x - 7 = -2$

4. $8x = 4x^2 - 1$

5. $2x^2 - 4x + 5 = 6$

6. $6x = 4x^2 - 1$

7. $x^2 + 2x - 8 = 0$

8. $x^2 - 7x = 18$