



Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

## SOLVE BY COMPLETING THE SQUARE WORKSHEET

- Steps:
- 1) Write the equation in the form:  $ax^2 + bx = c$
  - 2) If  $a \neq 1$ , divide both sides by  $a$ .
  - 3) Complete the square to form a perfect square trinomial. (add  $\left(\frac{b}{2}\right)^2$  to BOTH sides!)
  - 4) Factor the left side.
  - 5) Take the square root of both sides (don't forget  $\pm$ ).
  - 6) Solve for the variable.

**Find the value of  $c$  that makes the expression a perfect square trinomial. Then, write the resulting expression as a binomial squared.**

1.  $x^2 + 12x + c$

2.  $x^2 - 18x + c$

3.  $x^2 - 10x + c$

**Solve each equation by completing the square.**

4.  $x^2 + 4x + 11 = 0$

5.  $x^2 + 8 = 6x$

6.  $x^2 - 6x + 9 = 32$

7.  $2x^2 - 12x - 32 = 0$

8.  $10x + x^2 = 42$

9.  $x^2 + 10x + 25 = 49$

**Find the value of  $b$  in each perfect square trinomial.**

10.  $x^2 - bx + 144$

11.  $x^2 - bx + 16$

12.  $x^2 + bx + 49$

13. Solve by completing the square:  $x^2 + 10x + 14 = -7$

What other method could you have used to solve this quadratic equation? \_\_\_\_\_  
Explain.