

## Completing the Square

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

**Find the value of c that completes the square.**

1)  $n^2 + 16n + c$

2)  $x^2 - 6x + c$

3)  $x^2 + 20x + c$

4)  $x^2 + 18x + c$

**Find the value that completes the square and then rewrite as a perfect square.**

5)  $r^2 + 38r + \underline{\hspace{1cm}}$

6)  $x^2 - 14x + \underline{\hspace{1cm}}$

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7)  $x^2 + 12x + \underline{\hspace{1cm}}$

8)  $z^2 + 5z + \underline{\hspace{1cm}}$

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**Write each equation in vertex form by completing the square. Show all steps.**

9)  $y = x^2 + 2x - 36$

10)  $y = 2x^2 - 8x - 24$

11)  $y = x^2 + 12x + 20$

12)  $y = x^2 + 6x + 5$

13)  $y = 5x^2 + 20x + 1$

14)  $y = 9x^2 - 54x - 37$

$$15) y = 6x^2 + 36x - 95$$

$$16) y = x^2 + 16x + 10$$

$$17) y = 7x^2 + 14x - 12$$

$$18) y = 5x^2 - 50x + 100$$

$$19) y = x^2 + 7x - 3$$

$$20) y = 3x^2 + 9x + 7$$