Name: Period: Date:

Practice Worksheet: Completing the Square

Factor each perfect square trinomial as the square of a binomial.

1] $x^2 + 8x + 16$	2] $x^2 - 30x + 225$	3] $x^2 + 7x + \frac{49}{4}$
4] $x^2 - 3x + \frac{9}{4}$	5] $16x^2 + 40x + 25$	6] $4x^2 - 28x + 49$

Find the value of c that makes the trinomial a perfect square. Then write the expression as the square of a binomial.

7] $x^2 + 6x + c$	8] $x^2 - 10x + c$	9] $x^2 + 3x + c$
10] $x^2 - 9x + c$	11] $4x^2 + 20x + c$	12] $9x^2 - 12x + c$

Solve the quadratic equation by completing the square. Show work. Simplify radicals and write answers in the form a+bi.

13] $x^2 - 10x = -10$	14] $x^2 + 6x + 10 = 0$	15] $x^2 = 4 - 8x$

16] $3x^2 + 36x = -42$	17] $4x^2 + 20x + 25 = 0$	18] $6x^2 = 12x + 18$

Write the quadratic function in vertex form and identify the coordinates of the vertex.

19] $y = x^2 - 8x + 10$	20] $y = x^2 + 6x + 4$	21] $y = x^2 - 12x + 46$
22] $y = x^2 + 14x + 58$	23] $y = 3x^2 - 24x + 46$	