PROBLEM SET 5-8
(The Quadratic Formula)

Evaluate the discriminant of each equation. Tell how many solutions each equation has and whether the solutions are real or imaginary.

1. $2x^2 + x + 28 = 0$ **2.** $2x^2 + 7x - 15 = 0$ **3.** $6x^2 - 2x + 5 = 0$

4. $2x^2 + 7x = -6$ **5.** $x^2 - 12x + 36 = 0$ **6.** $x^2 = 8x - 16$

Solve each equation using the Quadratic Formula. Simplify all radicals.

7. $9x^2 + 12x - 5 = 0$ **8.** $2x^2 + 8x + 12 = 0$ **9.** $3x^2 + 4x + 10 = 0$

10. $-x^2 + 5x - 7 = 0$ **11.** $15x^2 + 2x + 1 = 0$ **12.** $2x^2 - 5x - 3 = 0$

13. $3x^2 - 10x + 5 = 0$ **14.** $3x^2 + 4x - 3 = 0$ **15.** $6x^2 - 5x - 1 = 0$

Solve each equation using any method. Simplify all radicals.

16. $4x^2 + 4x = 3$ **17.** $x^2 - 2x + 2 = 0$ **18.** $-3x^2 + 147 = 0$

19. $x^2 = 6x - 11$ **20.** $4x^2 - 4x - 3 = 0$ **21.** $\frac{x-3}{2} = \frac{6}{x-2}$