ALGEBRA II REVIEW PROBLEMS
(Secs 5-5 thru 5-8)

1. Solve by factoring or taking square roots:

a. $x^2 - 7x = 0$ **b.** $x^2 + 2x - 8 = 0$ **c.** $(x + 3)^2 = 9$

d. $4x^2 - 12x + 9 = 0$ **e.** $x^2 - 9 = 0$ **f.** $4x^2 + 3 = -8x$

2. Simplify the following:

a. $\sqrt{-24}$ **b.** $(4 - i) + (5 - 9i)$ **c.** $(6 - 3i)^2$

3. Solve by completing the square; simplify any radicals (NO DECIMALS):

a. $x^2 - 2x + 4 = 0$ **b.** $4x^2 - x - 3 = 0$

4. Rewrite $y = x^2 + 3x - 1$ into vertex form.

5. Use the discriminant to determine the number and type of solutions for each equation; DO NOT SOLVE:

a. $x^2 - 6x + 2 = 0$ **b.** $-2x^2 + 7x = 10$

6. Solve using the quadratic formula; simplify any radicals (NO DECIMALS):

a. $3x^2 - 21x + 3 = 0$ **b.** $5x^2 + x + 2 = 0$

ANSWERS

1a. $x = 0, 7$ **1b.** $x = 2, -4$ **1c.** $x = 0, -6$

1d. $x = \frac{3}{2}$ **1e.** $x = 3, -3$ **1f.** $x = -\frac{1}{2}, -\frac{3}{2}$

2a. $2i\sqrt{6}$ **2b.** $9 - 10i$ **2c.** $27 - 36i$

3a. $(x-1)^2 = -3$

$x = 1 \pm i\sqrt{3}$

3b. $\left(x - \frac{1}{8}\right)^2 = \frac{49}{64}$

$x = 1, -\frac{3}{4}$

4. $y = \left(x + \frac{3}{2}\right)^2 - \frac{13}{4}$

5a. Discriminant = 28; 2 real solutions

5b. Discriminant = – 31 ; 2 imaginary solutions

6a. $x = \frac{7+3\sqrt{5}}{2}, \frac{7-3\sqrt{5}}{2}$

6b. $x = \frac{-1+i\sqrt{39}}{10}, \frac{-1-i\sqrt{39}}{10}$