

DIRECTIONS: Factor completely.

$$1. x^2 + 9x + 20$$

$$(x + 5)(x + 4)$$

$$2. 36a^2 - 25$$

$$(6a - 5)(6a + 5)$$

$$3. 3m^2 + 6m - 45$$

$$3(m + 5)(m - 3)$$

$$4. 36x^2 - 84x + 49$$

$$(6x - 7)^2$$

$$5. 5x^2 - 6x - 8$$

$$(5x + 4)(x - 2)$$

DIRECTIONS: Simplify.

$$6. \sqrt{84}$$

$$2\sqrt{21}$$

$$7. \sqrt{-63}$$

$$3i\sqrt{7}$$

$$8. 2\sqrt{5} \cdot 8\sqrt{15}$$

$$80\sqrt{3}$$

$$9. (10i)^2$$

$$-100$$

$$10. \sqrt{\frac{6}{11}} \frac{\sqrt{66}}{11}$$

$$11. \sqrt{-6} \cdot \sqrt{-15}$$

$$-3\sqrt{10}$$

$$12. \frac{8}{7i} - \frac{8i}{7}$$

$$13. (16 + 5i) - (20 + 8i)$$

$$-4 - 3i$$

$$14. 3i(8 - 5i)$$

$$15 + 24i$$

$$15. (4 - 5i)(2 + 7i)$$

$$43 + 18i$$

$$16. \frac{8}{2-3i} \frac{16}{13} + \frac{24i}{13}$$

DIRECTIONS: Solve.

$$17. x^2 - 3x = 18$$

$$x = -3, 6$$

$$18. 3x^2 + 8x - 3 = 0$$

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

$$19. x^2 + 9 = 1$$

$$x = \pm 2i\sqrt{2}$$

$$20. 4x^2 = 64$$

$$x = \pm 4$$

$$21. 5x^2 = 25x$$

$$x = 0, 5$$

$$22. 6x^2 + 4 = -44$$

$$x = \pm 2i\sqrt{2}$$

$$23. -9(x - 5)^2 = 108$$

$$x = 5 \pm 2i\sqrt{3}$$