

Name \_\_\_\_\_ Date \_\_\_\_\_

**Chapter 6**  
**Form C**

For problems 1 – 13, factor completely or state that the polynomial is prime.

1.  $x^3 - 9x$  1. \_\_\_\_\_

2.  $x^2 - 3x - 108$  2. \_\_\_\_\_

3.  $50x^4y + 40x^3y^2 + 8x^2y^3$  3. \_\_\_\_\_

4.  $-3x^2y^3 + 21x^3y^4$  4. \_\_\_\_\_

5.  $2y^3 + y^2 - 18y - 9$  5. \_\_\_\_\_

6.  $25x^2 - 4$  6. \_\_\_\_\_

7.  $128x^4 - 162$  7. \_\_\_\_\_

8.  $32x^2 - 52x - 45$  8. \_\_\_\_\_

9.  $8x^3 - 125$  9. \_\_\_\_\_

10.  $9x^2 - 72x + 144$  10. \_\_\_\_\_

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11.  $x^2 - 6x - 7$

11. \_\_\_\_\_

12.  $y^3 + 4y^2 - 5y - 20$

12. \_\_\_\_\_

13.  $49x^2 + 25$

13. \_\_\_\_\_

For problems 14 – 18, solve each quadratic equation.

14.  $4x^2 = 16$

14. \_\_\_\_\_

15.  $x^2 - 8x = 20$

15. \_\_\_\_\_

16.  $4x(x + 3) = -9$

16. \_\_\_\_\_

17.  $6x^2 + x - 2 = 0$

17. \_\_\_\_\_

18.  $(x + 5)(x - 4) = 10$

18. \_\_\_\_\_

19. A rock is thrown from the top of a building. The formula  $h = -16t^2 - 6t + 27$  describes the height of the rock,  $h$ , in feet,  $t$  seconds after the rock is thrown. How long after the rock is thrown does it hit the ground?

19. \_\_\_\_\_

20. The length of a rectangular garden is 4 feet greater than the width. The area of the rectangle is 96 square feet. Find the length and width.

20. \_\_\_\_\_