Chapter 5 (C1) Final Exam Review

Write a polynomial function in standard form with the given zeros.

24. $x = 0, 4, -\frac{1}{2}$ **25.** $x = 0, 0, 2, 3$ **26.** $x = -1, -2, -3, -4$

Find the real or imaginary solutions of each equation by factoring.

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

22. $x^4 - 12x^2 = 64$ **23.** $x^4 + 7x^2 = 18$

Find the real or imaginary solutions of each equation by factoring.

40. $x^3 - 6x^2 + 6x = 0$

41. $12x^3 = 60x^2 + 75x$

46. $8x^3 + 27 = 0$

47. $10x^3 + 5x^2 + 4x + 2 = 0$

Divide using long division.

9. $(x^2 - 3x - 40) \div (x + 5)$

10. $(3x^2 + 7x - 20) \div (x + 4)$

44. $(2x^3 + 9x^2 + 14x + 5) \div (2x + 1)$

Determine whether each binomial is a factor of $x^3 + 4x^2 + x - 6$.

17. $x + 1$

18. $x + 2$

Use synthetic division and the given factor to completely factor each polynomial function.

29. $y = x^3 + 2x^2 - 5x - 6; (x + 1)$

30. $y = x^3 - 4x^2 - 9x + 36; (x + 3)$

Find the roots of each. You may or may not need to use P's and Q's.

10. $x^3 + 4x^2 + x - 6 = 0$

12. $x^4 + 4x^3 + 7x^2 + 16x + 12 = 0$

13. $x^4 - 4x^3 + x^2 + 12x - 12 = 0$

14. $x^5 + 3x^3 - 4x = 0$