

Practice B

For use with pages 352–358

Divide using polynomial long division.

- $(x^2 + 2x + 6) \div (x - 3)$
- $(2x^2 + x - 3) \div (x - 1)$
- $(x^3 - x^2 - x - 2) \div (x - 2)$
- $(4x^3 - 7x + 8) \div (2x - 1)$
- $(3x^3 + 2x^2 - 5x + 1) \div (3x + 1)$
- $(8x^2 - 5x + 1) \div (2x - 3)$
- $(x^3 + 5x^2 + 5x - 3) \div (x^2 + 3x - 1)$
- $(x^3 - 3x^2 + 4x - 6) \div (x^2 + x - 4)$

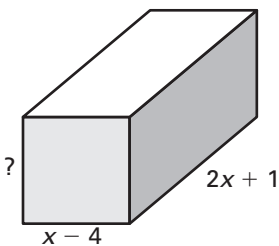
Divide using synthetic division.

- $(2x^3 - 7x^2 - x - 12) \div (x - 4)$
- $(x^3 - 2x + 12) \div (x + 3)$
- $(x^4 - 5x^3 + 4x - 17) \div (x - 5)$
- $(3x^3 - 2x^2 + 5x - 1) \div (x + 2)$
- $(5x^4 - 2x^3 - 3x^2 + 5x + 1) \div (x - 1)$
- $(3x^4 + 2x^3 - 5) \div (x + 4)$
- $(x^3 - 2) \div (x + 1)$
- $(3x^4 - 1) \div (x - 2)$

Given one zero of the polynomial function, find the other zeros.

- $f(x) = x^3 + 3x^2 - 34x + 48$; 3
- $f(x) = x^3 + 2x^2 - 20x + 24$; -6
- $f(x) = 2x^3 + 3x^2 - 3x - 2$; -2
- $f(x) = 3x^3 - 16x^2 + 3x + 10$; 5

21. **Geometry** The volume of the box shown below is given by $V = 2x^3 - 11x^2 + 10x + 8$. Find an expression for the missing dimension.

**Company Profit** In Exercises 22 and 23, use the following information.

The demand function for a type of portable radio is given by the model $p = 70 - 5x^2$, where p is measured in dollars and x is measured in millions of units. The production cost is \$20 per radio.

- Write an equation giving profit as a function of x million radios sold.
- The company currently produces 3 million radios and makes a profit of \$15,000,000, but would like to scale back production. What lesser number of radios could the company produce to yield the same profit?