

LESSON
5.5**Practice B**

For use with pages 362–368

Divide using polynomial long division.

- $(x^2 + 5x - 14) \div (x - 2)$
- $(x^2 - 2x - 48) \div (x + 5)$
- $(x^3 + x + 30) \div (x + 3)$
- $(6x^2 - 5x + 9) \div (2x - 1)$
- $(8x^3 + 5x^2 - 12x + 10) \div (x^2 - 3)$
- $(5x^4 + 2x^3 - 9x + 12) \div (x^2 - 3x + 4)$

Divide using synthetic division.

- $(x^2 + 7x + 12) \div (x + 4)$
- $(x^3 - 3x^2 + 8x - 5) \div (x - 1)$
- $(x^4 - 7x^2 + 9x - 10) \div (x - 2)$
- $(2x^4 - x^3 + 4) \div (x + 1)$
- $(2x^4 - 11x^3 + 15x^2 + 6x - 18) \div (x - 3)$
- $(x^4 - 6x^3 - 40x + 33) \div (x - 7)$

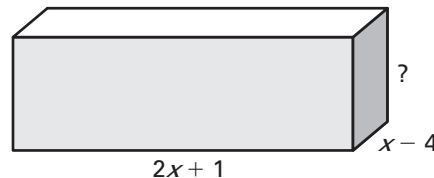
A polynomial f and a factor of f are given. Factor f completely.

- $f(x) = x^3 - 3x^2 - 16x - 12; x - 6$
- $f(x) = x^3 - 12x^2 + 12x + 80; x - 10$
- $f(x) = x^3 - 18x^2 + 95x - 126; x - 9$
- $f(x) = x^3 - x^2 - 21x + 45; x + 5$
- $f(x) = 4x^3 - 4x^2 - 9x + 9; x - 1$
- $f(x) = 3x^3 - 16x^2 - 103x + 36; x + 4$

A polynomial f and one zero of f are given. Find the other zeros of f .

- $f(x) = x^3 + 2x^2 - 20x + 24; -6$
- $f(x) = x^3 + 11x^2 - 150x - 1512; -14$
- $f(x) = 2x^3 + 3x^2 - 39x - 20; 4$
- $f(x) = 15x^3 - 119x^2 - 10x + 16; 8$
- $f(x) = x^3 - 3x^2 - 45x + 175; -7$
- $f(x) = x^3 - 9x^2 - 5x + 45; 9$

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



- 26. Fuel Consumption** From 1995 to 2002, the total fuel consumption T (in billions of gallons) by cars in the United States and the U.S. population P (in millions) can be modeled by

$$T = -0.003x^3 - 0.02x^2 + 1.3x + 68 \quad \text{and} \quad P = 3x + 267$$

where x is the number of years since 1995. Write a function for the average amount of fuel consumed by each person from 1995 to 2002.