35. ⬥ **TAKS REASONING** One zero of $f(x) = 4x^3 + 15x^2 - 63x - 54$ is $x = -6$. What is another zero of f?

    A -9 **B** -3 **C** -1 **D** 3

⟳ **GEOMETRY** You are given an expression for the volume of the rectangular prism. Find an expression for the missing dimension.

36. $V = 2x^3 + 17x^2 + 46x + 40$

$x + 2$
$x + 4$
?

37. $V = x^3 + 13x^2 + 34x - 48$

$x - 1$
?
$x + 6$
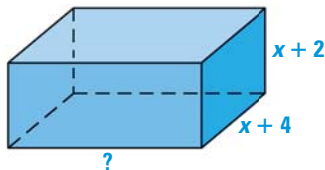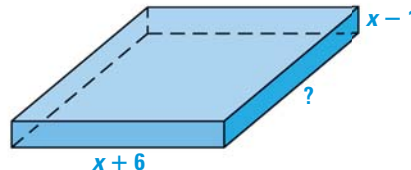
38. ◆◆ **MULTIPLE REPRESENTATIONS** Consider the polynomial function $f(x) = x^3 - 5x^2 - 12x + 36$.

  a. **Zeros of a Function** Given that $f(2) = 0$, find the other zeros of f.

  b. **Factors of an Expression** Based on your results from part (a), what are the factors of the polynomial $x^3 - 5x^2 - 12x + 36$?

  c. **Solutions of an Equation** What are the solutions of the polynomial equation $x^3 - 5x^2 - 12x + 36 = 0$?

39. ⬥ **TAKS REASONING** What is the value of k such that $x - 5$ is a factor of $x^3 - x^2 + kx - 30$?

    A -14 **B** -2 **C** 26 **D** 32

40. **CHALLENGE** It can be shown that $2x - 1$ is a factor of the polynomial function $f(x) = 30x^3 + 7x^2 - 39x + 14$.

  a. What can you conclude is a zero of f?

  b. Use synthetic division to write $f(x)$ in the form $(x - k) \cdot q(x)$.

  c. Write $f(x)$ as the product of linear factors with integer coefficients.

PROBLEM SOLVING

41. **CLOTHING** The profit P (in millions of dollars) for a T-shirt manufacturer can be modeled by $P = -x^3 + 4x^2 + x$ where x is the number of T-shirts produced (in millions). Currently, the company produces 4 million T-shirts and makes a profit of $4,000,000. What lesser number of T-shirts could the company produce and still make the same profit?

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42. **MP3 PLAYERS** The profit P (in millions of dollars) for a manufacturer of MP3 players can be modeled by $P = -4x^3 + 12x^2 + 16x$ where x is the number of MP3 players produced (in millions). Currently, the company produces 3 million MP3 players and makes a profit of $48,000,000. What lesser number of MP3 players could the company produce and still make the same profit?

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