**32.** **TAKS REASONING** Which is a factor of the LCD of $\frac{3}{x^2 - 4x}$ and $\frac{4x}{x + 2}$?

Ⓐ $3$ Ⓑ $x - 4$ Ⓒ $4x$ Ⓓ $x - 2$

**33.** **GEOMETRY** The height $h$ of a rectangular prism is given by

$$h = \frac{S}{2(\ell + w)} - \frac{\ell w}{\ell + w}$$

where $S$ is the surface area, $\ell$ is the length, and $w$ is the width. Find the difference of the expressions on the right side of the equation.

**USING ORDER OF OPERATIONS** **Use the order of operations to write the expression as a single rational expression.**

**34.** $2\left(\frac{x}{x + 1}\right) - 3\left(\frac{x - 4}{x + 2}\right)$

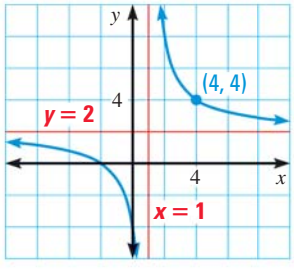
**35.** $5\left(\frac{3x}{x - 2} + \frac{4}{x^2 + 6x - 16}\right)$

**36.** $\frac{x - 3}{x^2 + 9x + 20} + \frac{5x}{x + 2} \cdot \frac{12}{x + 4}$

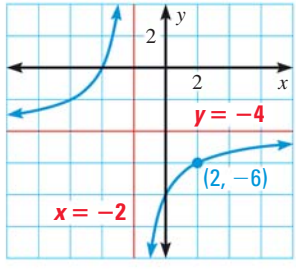
**37.** $\frac{x + 5}{x - 9} - \frac{3x^2 + 2x - 1}{x + 4} \div \frac{x^2 - 3x - 4}{x^2 - 16}$

**WRITING EQUATIONS** **For the given hyperbola, write an equation of the form $y = \frac{a}{b}$ where $a$ and $b$ are first-degree polynomials.**

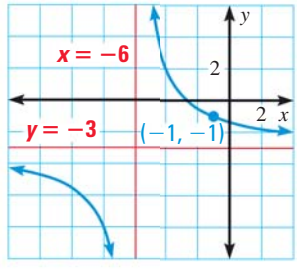
**38.**




**39.**




**40.**




**41.** **CHALLENGE** Let $a$, $b$, $c$, and $d$ be first-degree polynomials. Find two rational expressions $\frac{a}{b}$ and $\frac{c}{d}$ such that $\frac{a}{b} - \frac{c}{d} = \frac{5x + 7}{(x + 2)(x + 3)}$.

## PROBLEM SOLVING

**EXAMPLE 6** on p. 815 for Exs. 42–46

**42.** **CANOEING** A canoeist travels 16 miles upstream (against the current) and 16 miles downstream (with the current). The speed of the current is 1 mile per hour. Write an equation that gives the total travel time $t$ (in hours) as a function of the canoeist's average speed $r$ (in miles per hour) in still water. Then find the total travel time if the canoeist's average speed in still water is 6 miles per hour.

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**43.** **DRIVING** Matt drives 200 miles to another city. On the drive back home, his average speed decreases by 5 miles per hour. Write an equation that gives the total driving time $t$ (in hours) as a function of his average speed $r$ (in miles per hour) when driving to the city. Then find the total driving time if he drives to the city at an average speed of 50 miles per hour.

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