



## 4-4 Reteach to Build Understanding

### Adding and Subtracting Rational Expressions

1. Fill in the blanks to simplify the expression  $\frac{x}{x+2} + \frac{x-12}{x^2-3x-10}$ .

|  |   |
|--|---|
| $\frac{x}{x+2} + \frac{x-}{(x-)(x+2)}$ | Factor each denominator.  |
| $\frac{+x-12}{(x-5)(x+2)}$             | Use the LCM as the least common denominator.<br>Add the numerators. |
| $\frac{x^2}{(x-5)(x+2)}$               | Multiply and combine the like terms.                                |
| $\frac{(x-)(x+)}{(x-5)(x+2)}$          | Factor.   |
| $\frac{=}{=}$<br>$x \neq 5, -2$        | Simplify and state the domain.                                      |

2. Find the difference of  $\frac{2x}{x+4} - \frac{3x+4}{4x+16}$  by completing each expression.

Factor each denominator.

$$\frac{2x}{x+4} - \frac{3x+4}{\underline{\hspace{2cm}}}$$

Use the LCM as the least common denominator.

$$\frac{4(2x)}{\underline{\hspace{2cm}}} - \frac{3x+4}{\underline{\hspace{2cm}}}$$

Subtract the numerators.

$$\frac{4(2x) - (3x+4)}{4(x+4)}$$

Distribute.

$$\underline{\hspace{2cm}}$$

Simplify.

$$\underline{\hspace{2cm}}$$

3. Jake adds  $\frac{5x+6}{x+3} + \frac{3x-4}{2x}$  and concludes that the sum is  $\frac{8x+2}{3x+3}$ .

What is Jake's error? What is the correct sum?