

Name \_\_\_\_\_

**SHORT ANSWER.** Write the word or phrase that best completes each statement or answers the question.

**Simplify, if possible.**

$$1) \frac{25a^3b^7}{-15a^8b^3}$$

1) \_\_\_\_\_

$$2) \frac{8x + 24}{10x + 30}$$

2) \_\_\_\_\_

$$3) \frac{b^2 + 3b - 28}{b^2 - 49}$$

3) \_\_\_\_\_

**Multiply and, if possible, simplify.**

$$4) \frac{x^2 - x - 2}{x^2 + 5x + 6} \cdot \frac{x + 2}{x^2 + 2x - 8}$$

4) \_\_\_\_\_

$$5) \frac{y^2 - 25}{8y - 40} \cdot \frac{y - 6}{y + 5}$$

5) \_\_\_\_\_

**Divide and, if possible, simplify.**

$$6) \frac{3y+15}{y^7} \div \frac{y+5}{y^2}$$

6) \_\_\_\_\_

$$7) \frac{z^2 + 11z + 28}{z^2 + 16z + 63} \div \frac{z^2 + 4z}{z^2 + 5z - 36}$$

7) \_\_\_\_\_

Perform the indicated operation. Simplify, if possible.

$$8) \frac{3+7t}{2t} - \frac{6t-1}{2t}$$

8) \_\_\_\_\_

$$9) \frac{x^2-4x}{x-3} + \frac{4x-x^2}{x-3}$$

9) \_\_\_\_\_

$$10) \frac{x}{x^2-16} - \frac{4}{x^2+5x+4}$$

10) \_\_\_\_\_

$$11) \frac{m+3}{m^2-6m+8} + \frac{5m+6}{m^2-10m+24}$$

11) \_\_\_\_\_

Solve. If no solution exists, state this.

$$12) \frac{7}{7x} + \frac{1}{2x} = -\frac{1}{14}$$

12) \_\_\_\_\_

$$13) \frac{3}{x-5} = \frac{6}{x}$$

13) \_\_\_\_\_

$$14) \frac{3}{y+3} - \frac{7}{y-3} = \frac{14}{y^2-9}$$

14) \_\_\_\_\_