

NAME \_\_\_\_\_

DATE \_\_\_\_\_

SCORE \_\_\_\_\_

**Rational Expressions** (For use after Lesson 5-7)

1-14

Simplify.

1.  $\frac{8x^2z}{6x^5z^{-2}}$

$$\frac{4z^3}{4x^3}$$

3.  $\frac{a^3 - 2a^2}{(a-2)^2}$

$$\frac{a^2}{a-2}$$

5.  $\frac{2c^2 + 5c - 3}{4c^2 - 1}$

$$\frac{c+3}{2c-1}$$

7.  $\left(\frac{6a^3}{b^2}\right)\left(\frac{a^2}{4b^3}\right)^{-3}$

$$\frac{384b^7}{a^3}$$

2.  $(x-1)^{-2}(x^2-1)$

$$\frac{x+1}{x-1}$$

4.  $\frac{c^2 - 2c - 15}{2c - 10}$

$$\frac{c+3}{2}$$

6.  $\frac{a^4 - b^4}{a^3 + a^2b + ab^2 + b^3}$

$$a-b$$

8.  $\frac{x^2}{x^2-1} \div \frac{4x}{x^2-2x+1}$

$$\frac{x(x-1)}{4(x+1)}$$

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

$$\frac{(x-5)(x+1)(x+4)}{(x+3)(x-4)(x+2)}$$

10.  $\frac{2}{a} - \frac{3}{a^2}$

$$\frac{2a-3}{a^2}$$

11.  $\frac{2}{x} + \frac{5}{y}$

$$\frac{2y+5x}{xy}$$

12.  $\frac{3}{x} - \frac{3}{x-2}$

$$\frac{-6}{x^2-2x}$$

13.  $1 - \frac{2}{x} - \frac{3}{x^2}$

$$\frac{x^2-2x-3}{x}$$

14.  $\frac{2x+y}{2x-y} + \frac{2x-y}{2x+y}$

$$\frac{8x^2+2y^2}{4x^2-y^2}$$

15.  $\frac{3}{x^2+2x} - \frac{2}{x^2+x-2} + \frac{1}{x+2}$

$$\frac{x^2-3}{x(x+2)(x-1)}$$

16.  $\frac{a}{bc} + \frac{b}{ac}$

$$\frac{a^2+b^2}{abc}$$