

# Operations on Rational Expressions Answer Key

*Add 'Em Up, Rawhide!*

Perform the following operations on rational expressions.

$$1. \frac{2x^3 - x^2 - x}{2x^2 + 5x + 2} \times \frac{x+2}{x}$$

$$x - 1$$

$$6. \frac{2y^2 + 5y + 2}{y^3 + 4} + \frac{4y + 7}{y^3 + 4}$$

$$\frac{2y^2 + 9y + 9}{y^3 + 4}$$

$$2. \frac{4x^2 - 1}{2x^3 + x^2 - 6x - 3} \times \frac{x^2 - 3}{x - 3}$$

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

$$7. \frac{3x^2 - 10}{3x + 5} - \frac{2x^3 + 7}{3x + 5}$$

$$\frac{3x^2 - 2x^3 - 17}{3x + 5}$$

$$3. \frac{3x^2 + 7x + 4}{x^2 + 3x + 2} \div \frac{1}{2}$$

$$\frac{6x + 8}{x + 2}$$

$$8. \frac{2x}{x^2 + 5x + 6} - \frac{1}{x + 3}$$

$$\frac{x^2 + x - 6}{x^2 + 5x + 6}$$

$$4. \frac{x^2 + 2xy + y^2}{x + y} \div \frac{4y + 4x}{2x + 2x}$$

$$x$$

$$9. \frac{2x}{x^2 - 9} + \frac{1}{x + 3}$$

$$\frac{3(x - 1)}{x^2 - 9}$$

$$5. \frac{-3x^2 + 13x + 10}{x^2 + 4x + 3} \div \frac{5 - x}{x + 3}$$

$$\frac{3x + 2}{x + 1}$$

$$10. \frac{6}{x^2 - 4x - 5} - \frac{5}{x^2 - 3x - 4}$$

$$\frac{1}{x^2 - 9x + 20}$$

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