

Chapter 9 Rational Functions

Fractions

1) $\frac{3}{4} \cdot \frac{10}{9}$	2) $\frac{2}{3} \div \frac{12}{5}$	3) $\frac{3}{4} - \frac{5}{6}$	4) $\frac{3}{4} + \frac{2}{3}$
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Exponent Properties

1) $a^n \cdot a^m = a^{n+m}$	2) $(a^n)^m = a^{n \cdot m}$	3) $\frac{a^n}{a^m} = a^{n-m}$	4) $a^0 = 1$
5) $a^{-n} = \frac{1}{a^n}$	6) $\frac{1}{a^{-n}} = a^n$	7) $(ab)^n = a^n \cdot b^n$	8) $\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$

Factoring

1) $-12x^3 + 8x^2$	2) $2x^2 + 10x + 12$	3) $x^2 + 2xy - 8y^2$	4) $6x^2 - 5x - 4$
5) $4x^6 - 81y^2$	6) $100x^2 - 140x + 49$	7) $x^3 + 27$	8) $8x^6 - 125y^3$

9-4 Rational Expressions

1) $\frac{12x^5y^{-6}}{4x^{-4}y^2}$	2) $\frac{x^2 - 16}{5x - 20}$	3) $\frac{30x^6}{5y^{-4}} \div \frac{3x^{-2}}{10y}$
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$$4) \frac{2x^2 - 2}{4x} \div \frac{x^2 + 3x + 2}{2x^2 + 4x}$$

$$5) \frac{x-1}{x^2 - 5x + 4} \cdot (12 - 3x)$$

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

9-5 Adding and Subtracting Rational Expressions

$$1) \frac{x^2}{4x} + \frac{3x}{4x}$$

$$2) \frac{x^2 + 2}{x^2 - 9} - \frac{11}{x - 3}$$

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

9-6 Solving Rational Equations

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

$$2) \frac{x}{4} - x = \frac{3}{2x}$$

$$3) \frac{3}{x^2 - 4} - \frac{4}{x + 2} x = \frac{1}{x - 2}$$