

Simplify. State any domain restrictions.

$$1. \frac{9x^2 + 12x + 4}{9x^2 - 4}$$

$$(3x+2)/(3x-2); x \neq \pm 2/3$$

$$2. \frac{3x^2 - 7x + 2}{x+4} \cdot \frac{3x+12}{x-2}$$

$$3(3x-1); x \neq -4, 2$$

$$3. \frac{4x-8}{x^2-x-6} \div \frac{x^3+x^2-6x}{x^2-9}$$

$$4/[x(x+2)]; x \neq \pm 2, \pm 3, 0$$

$$4. \frac{5}{2x-3} + \frac{3}{2x-3}$$

$$8/(2x-3); x \neq 3/2$$

Solve using {complex numbers}.

$$5. 3y^3 = 15y$$

$$y = \{0, \pm\sqrt{5}\}$$

$$6. 2x^5 = 8x - 6x^3$$

$$x = \{\pm 1, \pm 2i, 0\}$$