

Simplify each.

$$1. \frac{\frac{3}{4x^2y} - \frac{4x}{y^3}}{\frac{1}{2xy^2} + \frac{5}{6x^3}}$$

$$2. \frac{\frac{x}{3x^2-12} + \frac{4}{x^3+3x^2-10x}}{\frac{7}{2x^2+10x} - \frac{6}{x^2+7x+10}}$$

Simplify each.

$$1. \frac{\frac{3}{4x^2y} - \frac{4x}{y^3}}{\frac{1}{2xy^2} + \frac{5}{6x^3}} \cdot \frac{12x^3y^3}{12x^3y^3}$$

$$= \frac{9xy^2 - 48x^4}{6x^2y + 10y^3}$$

$$2. \frac{\frac{x}{3x^2-12} + \frac{4}{x^3+3x^2-10x}}{\frac{7}{2x^2+10x} - \frac{6}{x^2+7x+10}}$$

$$= \frac{\frac{x}{3(x+2)(x-2)} + \frac{4}{x(x+5)(x-2)}}{\frac{7}{2x(x+5)} - \frac{6}{(x+5)(x+2)}} \cdot \frac{6x(x+5)(x+2)}{6x(x+5)(x+2)}$$

$$= \frac{2x(x)(x+5) + 6(4)(x+2)}{3(7)(x+2)(x-2) - 6x(6)(x-2)}$$

$$= \frac{2x^3 + 10x^2 + 24x + 48}{21x^2 - 84 - 36x^2 + 72x}$$

$$= \frac{2x^3 + 10x^2 + 24x + 48}{-15x^2 + 72x - 84}$$