

$$1. \frac{\overset{x}{2}\overset{2}{x} + \overset{1}{4}}{\overset{1}{x} + \overset{1}{4}} \cdot \frac{\overset{x}{x^2} - \overset{4}{4} \overset{2}{2}}{\overset{4}{4}\overset{1}{x} + \overset{8}{8}\overset{1}{1}} = \frac{2x - 4}{2x + 2} = \frac{x - 4}{2}$$

$$= \frac{(2x + 4)}{(x + 4)} \cdot \frac{(x - 4)(x + 4)}{(4x + 8)}$$

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

$$= \frac{2(x - 4)}{2 \cdot 2}$$

$$\oplus = \frac{x - 4}{2}$$

$$y^2 + 8y + 15$$

$$4y - 20$$

$$y^2 - 25$$

$$4x + 8$$

$$= \frac{y^2 + 8y + 15}{y^2 - 25} = \frac{y + 3}{y - 5}$$

$$= \frac{4y - 20}{4x + 8} = \frac{y - 5}{x - 2}$$

$$= \frac{y + 3}{y - 5} - \frac{y - 5}{x - 2}$$

$$= \frac{y + 3}{x + 2}$$

$$\frac{x^3 + 164}{x^2 - 14}$$

$$16x - 24$$

$$\frac{x^3 + 4x^2 + 16x}{x^2 - 14}$$

$$\frac{x^3 + 164}{x^2 - 14} \cdot \frac{x^2 - 4x + 16}{x - 4}$$

$$= \frac{(x^2 - 4x + 16) \cdot 16(x - 4)}{(x - 4)(x^3 - 4x^2 + 16x)}$$

$$= \frac{(x^2 - 4x + 16) \cdot 16}{x(x^3 - 4x^2 + 16x)}$$

$$= \frac{16}{x}$$

$$\frac{5x^2 + 13x - 6}{4 - 25x}$$

$$\frac{10x - 4}{9 - x^2}$$

$$= \frac{(5x^2 + 13x - 6)(10x - 4)}{(4 - 25x)(9 - x^2)}$$

$$= \frac{(5x - 2)(x + 3)(10x - 4)}{(4 - 25x)(3 + x)(3 - x)}$$

$$= \frac{(5x - 2)(10x + 4)}{(4 - 25x)(3 - x)}$$