

$$a) \frac{2}{x}$$

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

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

$$d) \frac{1}{x} - \frac{2}{x} = \frac{1-2}{x} = -\frac{1}{x}$$

$$e) \frac{3}{1} \cdot \frac{1}{x} = \frac{3 \cdot 1}{1 \cdot x} = \frac{3}{x}$$

$$f) \frac{1}{x} \cdot \frac{1}{2} = \frac{1}{2x}$$

$$g) \frac{1}{x} - \frac{1}{2x} = \frac{2}{2x} - \frac{1}{2x} = \frac{2-1}{2x} = \frac{1}{2x}$$

$$h) \frac{1}{3x} - \frac{1}{2x} = \frac{2}{6x} - \frac{3}{6x} = \frac{2-3}{6x} = -\frac{1}{6x}$$

$$i) \frac{1}{3x} + \frac{1}{2x} = \frac{2x \cdot 1 + 1 \cdot 3x}{3x \cdot 2x} = \frac{5x}{6x^2} = \frac{5}{6x}$$

$$j) \frac{1}{x} \cdot \frac{1}{x} = \frac{1 \cdot 1}{x \cdot x} = \frac{1}{x^2}$$

$$k) \frac{1}{x} + \frac{1}{x^2} = \frac{x \cdot 1}{x \cdot x} + \frac{1}{x^2} = \frac{x}{x^2} + \frac{1}{x^2} = \frac{x+1}{x^2}$$

$$l) \frac{1 \cdot (x+1) + x \cdot 1}{x(x+1)} = \frac{x+1+x}{x(x+1)} = \frac{2x+1}{x(x+1)}$$

$$m) 1 + \frac{1}{x} = \frac{1}{1} + \frac{1}{x} = \frac{x}{x} + \frac{1}{x} = \frac{x+1}{x}$$

$$h) \frac{1}{x} \div \frac{1}{x^2} = \frac{1}{x} \cdot \frac{x^2}{1} = \frac{x^2}{x} = \frac{x \cdot \cancel{x}}{\cancel{x}} = \frac{x}{1} = x$$

$$d) \frac{1}{x} - \frac{x}{x+1} = \frac{1 \cdot (x+1) - x \cdot x}{x(x+1)} = \frac{-x^2 + x + 1}{x(x+1)}$$

$$p) \frac{1}{x} + \frac{1}{x^2} = \frac{x}{x^2} + \frac{1}{x^2} = \frac{x+1}{x^2}$$

$$q) \frac{1}{x} \cdot \frac{1}{y} = \frac{1 \cdot 1}{x \cdot y} = \frac{1}{xy}$$

$$r) \frac{1}{x} + \frac{1}{y} = \frac{1 \cdot y}{x \cdot y} + \frac{x \cdot 1}{x \cdot y} = \frac{y+x}{xy}$$

$$s) \frac{1}{x} \div \frac{1}{y} = \frac{1}{x} \cdot \frac{y}{1} = \frac{y}{x}$$

$$t) \quad \frac{1}{x} - \frac{1}{y} = \frac{1 \cdot y - x \cdot 1}{x \cdot y} = \frac{y - x}{xy}$$

$$u) \quad \frac{1}{x} + \frac{1}{x^2} = \frac{x \cdot 1}{x \cdot x} + \frac{1}{x^2} = \frac{x}{x^2} + \frac{1}{x^2} = \frac{x+1}{x^2}$$