

Reseni: [3.6.-4.6.2020]

①

$$a) \frac{\frac{a}{b}}{\frac{c}{d}} = \frac{a}{b} \cdot \frac{d}{c} = \frac{a \cdot d}{b \cdot c} = \frac{ad}{bc}$$

b to
c to
d to

$$b) \frac{\frac{9x}{4y^2}}{\frac{18x^2}{6y}} = \frac{\frac{9x \cdot 3}{4y^2}}{\frac{18x^2 \cdot 4y^2}{2 \cdot 2}} = \frac{3}{4xy}$$

x to
y to

$$c) \frac{\frac{21a^2b}{abc}}{\frac{14a^2}{1}} = \frac{\frac{3 \cdot 7a^2b}{abc}}{14a^2} = \frac{3}{2ac}$$

a to
b to
c to

$$d) \frac{\frac{15x^4y^2}{35x^8y^4}}{14x^2y^3} = \frac{15 \cdot x^4y^2 \cdot 14x^2y^3}{35x^8y^4} = \frac{3 \cdot 5 \cdot 2 \cdot 7 \cdot x^6y^5}{5 \cdot 7 \cdot x^8y^4} = \frac{6y}{x^2}$$

x to
y to

$$② a) \frac{\frac{x(x+3)}{3x+9}}{\frac{x^3+x}{x^2+1}} = \frac{\frac{x(x+3)}{3(x+3)}}{\frac{x(x^2+1)}{x^2+1}} = \frac{\frac{x(x+3)(x^2+1)}{3(x+3) \cdot x \cdot (x^2+1)}}{1} = \frac{1}{3}$$

x ≠ -3
x ≠ 0

$$b) \frac{\frac{6a-4b}{a^3b^2-a^2b^3}}{\frac{3a^2-2ab}{8a^2b^3}} = \frac{\frac{2(3a-2b)}{a^2b^2(a-b)}}{\frac{a(3a-2b)}{8a^2b^3}} = \frac{2(3a-2b) \cdot 8a^2b^3}{a^2b^2(a-b) \cdot a \cdot (3a-2b)} = \frac{16b}{a(a-b)}$$

a to
b to
a ≠ b
a ≠ $\frac{2}{3}b$

$$c) \frac{\frac{a^2-b^2}{a^2+6a+9}}{\frac{3a+3b}{a^2+3a}} = \frac{\frac{(a-b)(a+b)}{(a+3)(a+3)}}{\frac{3(a+b)}{a(a+3)}} = \frac{(a-b)(a+b) \cdot a \cdot (a+3)}{(a+3)(a+3) \cdot 3 \cdot (a+b)} = \frac{a(a-b)}{(a+3) \cdot 3}$$

a ≠ -3
a ≠ -b
a ≠ 0

3

$$a) \frac{1 + \frac{1}{a}}{1 - \frac{1}{a}} = \frac{\frac{a+1}{a}}{\frac{a-1}{a}} = \frac{(a+1) \cdot \cancel{a}}{\cancel{a} \cdot (a-1)} = \boxed{\frac{a+1}{a-1}} \quad \begin{array}{l} a \neq 0 \\ a \neq 1 \end{array}$$

$$b) \frac{\frac{x^2 - y^2}{xy}}{\frac{1}{x} + \frac{1}{y}} = \frac{\frac{(x-y)(x+y)}{xy}}{\frac{y+x}{xy}} = \frac{(x-y) \cdot \cancel{(x+y)} \cdot \cancel{xy}}{\cancel{xy} \cdot (y+x)} = \boxed{x-y}$$

$\begin{array}{l} x \neq 0 \\ y \neq 0 \\ x \neq -y \end{array}$