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・分数式

(例1)

(1) $\frac{18a^3b}{45ab^2} = \frac{2a^2}{5b}$ //

(2) $\frac{x-1}{x^2-3x+2} = \frac{x-1}{(x-1)(x-2)} = \frac{1}{x-2}$ //

(3) $\frac{2x^2+5x-3}{x^2-1} \times \frac{x+1}{2x-1} = \frac{(2x-1)(x+3)}{(x+1)(x-1)} \times \frac{x+1}{2x-1} = \frac{x+3}{x+1}$ //

(4) $\frac{x^2+x}{x^2-4x-5} \div \frac{x^2}{x^2-7x+10} = \frac{x(x+1)}{(x+1)(x-5)} \times \frac{(x-2)(x-5)}{x^2} = \frac{x-2}{x}$ //

(5) $\frac{a}{a+1} + \frac{1}{a+1} = \frac{a+1}{a+1} = 1$ //

(6) $\frac{x^2}{x+1} - \frac{1}{x+1} = \frac{x^2-1}{x+1} = \frac{(x+1)(x-1)}{x+1} = x-1$ //

(7) $\frac{1}{a} - \frac{1}{a+1} = \frac{a+1}{a(a+1)} - \frac{a}{a(a+1)}$ ← $\frac{(a+1)-a}{a(a+1)}$

$= \frac{1}{a(a+1)}$

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

$= \frac{(x+1)(x+1)}{x(x+1)(x-1)} - \frac{x \times x}{x(x+1)(x-1)}$

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

$= \frac{2x+1}{x(x+1)(x-1)}$ //

(9) $\frac{\frac{1}{x}}{1+\frac{1}{x}} = \frac{\frac{1}{x} \times x}{(1+\frac{1}{x}) \times x}$ ← 分母・分子に同じ文字をかけても等しい

$= \frac{1}{x+1}$ //

(10) $\frac{1}{1+\boxed{\frac{1}{1+\frac{1}{a}}}} = \frac{1}{1+\frac{1 \times a}{(1+\frac{1}{a}) \times a}}$

$= \frac{1}{1+\frac{a}{a+1}}$

$= \frac{1 \times (a+1)}{(1+\frac{a}{a+1}) \times (a+1)}$

$= \frac{a+1}{a+1+a}$

$= \frac{a+1}{2a+1}$ //