

NOM :

PRENOM :

Simplifier pour x et y des nombres réels appropriés :Question 1 (/1pt). $\frac{1}{3} - \frac{5}{6}$.

$$\frac{1}{3} - \frac{5}{6} = \frac{2}{6} - \frac{5}{6} = -\frac{3}{6} = -\frac{1}{2}$$

Question 2 (/1pt). $\frac{12}{5}$.

$$\frac{12}{5} = \frac{12}{5 \times 4} = \frac{3 \times 4}{5 \times 4} = \frac{3}{5}$$

Question 3 (/1,5pt). $\frac{1}{x} - \frac{x-1}{x+2}$.

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

Question 4 (/1,5pt). $\frac{1}{x^2y} - \frac{x}{4y^2}$.

$$\frac{1}{x^2y} - \frac{x}{4y^2} = \frac{4y}{4x^2y^2} - \frac{x^3}{4x^2y^2} = \frac{4y-x^3}{4x^2y^2}$$

Question 5 (/2pts). $\frac{(\sqrt{ab})^4}{(a^{-1}b^6)^{-1}}$

$$\frac{(\sqrt{ab})^4}{(a^{-1}b^6)^{-1}} = \frac{a^2b^4}{ab^{-6}} = ab^{10}$$

Question 6 (/3pts). $\frac{\frac{1}{1+\frac{1}{x}} - 1}{\frac{1}{x+1} - 1}$.

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

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PRENOM :

Simplifier pour x et y des nombres réels appropriés :Question 1 (/1pt). $\frac{1}{6} - \frac{2}{3}$.

$$\frac{1}{6} - \frac{2}{3} = \frac{1}{6} - \frac{4}{6} = -\frac{3}{6} = -\frac{1}{2}$$

Question 2 (/1pt). $\frac{10}{\frac{5}{2}}$.

$$\frac{10}{\frac{5}{2}} = \frac{10 \times 2}{5} = 4$$

Question 3 (/1,5pt). $\frac{1}{x+2} - \frac{x-3}{x}$.

$$\begin{aligned} \frac{1}{x+2} - \frac{x-3}{x} &= \frac{x}{(x+2)x} - \frac{(x-3)(x+2)}{x(x+2)} = \frac{x - (x^2 - 3x + 2x - 6)}{x(x+2)} \\ &= \frac{6 + 2x - x^2}{2x + x^2} \end{aligned}$$

Question 4 (/1,5pt). $\frac{1}{y^2x} - \frac{y}{3x^2}$.

$$\frac{1}{y^2x} - \frac{y}{3x^2} = \frac{3x}{3x^2y^2} - \frac{y^3}{3x^2y^2} = \frac{3x - y^3}{3x^2y^2}$$

Question 5 (/2pts). $\frac{(a^{-2}b)^{-3}}{(a\sqrt{b})^6}$.

$$\frac{(a^{-2}b)^{-3}}{(a\sqrt{b})^6} = \frac{a^6 b^{-3}}{a^6 b^3} = b^{-6}$$

Question 6 (/3pts). $\frac{\frac{1}{x-1} + 1}{1 - \frac{1}{x} - 1}$.

$$\begin{aligned} \frac{\frac{1}{x-1} + 1}{1 - \frac{1}{x} - 1} &= \frac{\frac{1}{x-1} + 1}{\frac{x}{x} - 1} = \frac{\frac{1}{x-1} + 1}{\frac{x}{x} - 1} = \frac{1 + x - 1}{x - (x-1)} = \frac{x}{1} = x \end{aligned}$$