

$$\begin{aligned}
6. \quad \frac{6}{2(x-1)(x+1)} + \frac{1}{6(x-1)^2} &= \frac{6}{2(x-1)(x+1)} \cdot \frac{3(x-1)}{3(x-1)} \\
&+ \frac{1}{6(x-1)^2} \cdot \frac{x+1}{x+1} = \frac{18(x-1)}{6(x-1)^2(x+1)} \\
&+ \frac{x+1}{6(x-1)^2(x+1)} = \frac{18(x-1) + x+1}{6(x-1)^2(x+1)}
\end{aligned}$$

$$\begin{aligned}
7. \quad \frac{4}{3xy^2} + \frac{9}{2x^5y} - \frac{1}{x^3y^3} &= \frac{4}{3xy^2} \cdot \frac{2x^4y}{2x^4y} + \frac{9}{2x^5y} \cdot \frac{3y^2}{3y^2} - \frac{1}{x^3y^3} \cdot \frac{6x^2}{6x^2} \\
&= \frac{8x^4y}{6x^5y^3} + \frac{27y^2}{6x^5y^3} - \frac{6x^2}{6x^5y^3} = \frac{8x^4y + 27y^2 - 6x^2}{6x^5y^3}
\end{aligned}$$