

$$\begin{aligned}
 & \frac{9x^2-4}{4x^2-4x+1} \cdot \frac{3x-2}{2x-1} + \frac{x+3}{1-2x} = \frac{9x^2-4}{4x^2-4x+1} \cdot \frac{2x-1}{3x-2} + \frac{x+3}{1-2x} = \frac{(9x^2-4)(2x-1)}{(4x^2-4x+1)(3x-2)} + \frac{x+3}{1-2x} = \\
 & = \frac{(9x^2-4)(2x-1)}{(4x^2-4x+1)(3x-2)} + \frac{x+3}{-2x+1} = \frac{(9x^2-4)(2x-1)}{(4x^2-4x+1)(3x-2)} - \frac{x+3}{2x-1} = \frac{(3x+2)(3x-2)(2x-1)}{(2x-1)(2x-1)(3x-2)} - \frac{x+3}{2x-1} = \\
 & = \frac{3x+2}{2x-1} - \frac{x+3}{2x-1} = \frac{(3x+2)-(x+3)}{2x-1} = \frac{3x+2-x-3}{2x-1} = \frac{2x-1}{2x-1} = 1
 \end{aligned}$$

$$\begin{aligned}
 & \left(\frac{1}{m-n} - \frac{n}{m^2-mn} \right) \cdot \frac{m}{n-m} = \left(\frac{1}{m-n} - \frac{n}{m^2-mn} \right) \frac{n-m}{m} = \left(\frac{1}{m-n} - \frac{n}{m^2-mn} \right) \frac{-m+n}{m} = - \left(\frac{1}{m-n} - \frac{n}{m^2-mn} \right) \frac{m-n}{m} = \\
 & = - \left(\frac{1}{m-n} - \frac{n}{m(m-n)} \right) \frac{m-n}{m} = - \left(\frac{m}{(m-n)m} - \frac{n}{m(m-n)} \right) \frac{m-n}{m} = - \frac{m-n}{(m-n)m} \cdot \frac{m-n}{m} = - \frac{1}{m} \cdot \frac{m-n}{m} = \\
 & = - \frac{m-n}{mm} = - \frac{m-n}{m^2}
 \end{aligned}$$