

18.

$$\begin{aligned}
& 2u - \left(\frac{2u-3}{u+1} - \frac{u+1}{2-2u} - \frac{u^2+3}{2u^2-2} \right) \cdot \frac{u^3+1}{u^2-u} = \\
& = 2u - \left(\frac{2u-3}{u+1} - \frac{u+1}{2(1-u)} - \frac{u^2+3}{2(u^2-1)} \right) \cdot \frac{u^3+1}{u(u-1)} = \\
& = 2u - \left(\frac{2u-3}{u+1} + \frac{u+1}{2(u-1)} - \frac{u^2+3}{2(u-1)(u+1)} \right) \cdot \frac{u^3+1}{u(u-1)} = \\
& = 2u - \left(\frac{(2u-3)(2u-2) + (u+1)^2 - (u^2+3)}{2(u-1)(u+1)} \right) \cdot \frac{u^3+1}{u(u-1)} = \\
& = 2u - \left(\frac{4u^2 - 4u - 6u + 6 + u^2 + 2u + 1 - u^2 - 3}{2(u-1)(u+1)} \right) \cdot \frac{u^3+1}{u(u-1)} = \\
& = 2u - \frac{4u^2 - 8u + 4}{2(u-1)(u+1)} \cdot \frac{u^3+1}{u(u-1)} = 2u - \frac{4 \cdot (u^2 - 2u + 1) \cdot (u^3+1)}{2u(u-1)^2(u+1)} = \\
& = 2u - \frac{4 \cancel{(u-1)^2} (u+1) (u^2 - u + 1)}{2u \cancel{(u-1)^2} (u+1)} = \frac{4u^2 - 4(u^2 - u + 1)}{2u} = \\
& = \frac{4u^2 - 4u^2 + 4u - 4}{2u} = \\
& = \frac{4u - 4}{2u} = \frac{4(u-1)}{2u} = \frac{2(u-1)}{u}
\end{aligned}$$

$$u \neq 0$$

$$u \neq \pm 1$$