

$$\begin{aligned} I &= \int_2^3 \left(\frac{x-1}{(x-1)^2} + \frac{1}{(x-1)^2} \right) dx \\ &= \int_2^3 \left(\frac{1}{x-1} + \frac{1}{(x-1)^2} \right) dx \end{aligned}$$

$$\begin{aligned} &= \left[\log |x - 1| - \frac{1}{x - 1} \right]_2^3 \\ &= \log 2 - \frac{1}{2} + 1 = \log 2 + \frac{1}{2} \end{aligned}$$