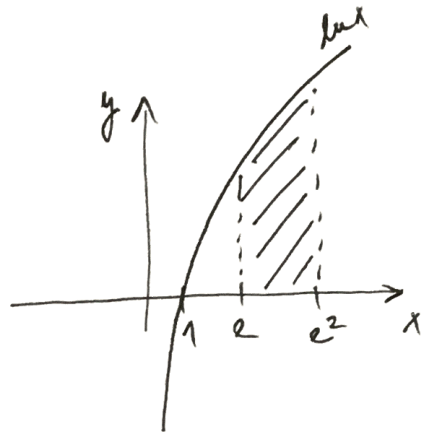


ln(x) integral

$$\textcircled{\text{Pr}} \int_{e^{2.7}}^{e^2 \approx 7.4} 1 \cdot \ln x \, dx =$$



$$= \left| \begin{array}{ll} u = \ln x & u' = \frac{1}{x} \\ v' = 1 & v = x \end{array} \right| =$$

$$= \left[x \ln x \right]_e^{e^2} - \int_e^{e^2} 1 \, dx = \underbrace{e^2 \ln e^2}_2 - \underbrace{e \ln e}_1 - [x]_e^{e^2} =$$

$$\checkmark = 2e^2 - e - (e^2 - e) = \underline{\underline{e^2 \approx 7.4}}$$

$$\textcircled{\text{Pr}} \int_{x=0}^{x=\pi/2} \cos^2 x (\sin x \, dx) = \left| \begin{array}{l} \boxed{\cos x = t} \\ -\sin x \, dx = dt \\ \begin{array}{l} x=0 \quad t = \cos 0 = 1 \\ x=\pi/2 \quad t = \cos \pi/2 = 0 \end{array} \end{array} \right| =$$

$$= -\int_{\underline{1}}^0 t^2 \, dt = + \int_0^1 t^2 \, dt = \left[\frac{t^3}{3} \right]_{\underline{0=t}}^1 = \frac{1^3}{3} - \frac{0^3}{3} = \underline{\underline{\frac{1}{3}}}$$