

CORRECTION

EXERCICE n°24 :

a. On a :

$$\int_1^e \frac{\ln x}{x} dx = \int_1^e \frac{1}{x} \times \ln x dx = \left[\frac{(\ln x)^2}{2} \right]_1^e = \frac{1}{2}.$$

b. On a :

$$\int_{\ln 3}^{\ln 10} e^x (e^x - 3) dx = \int_{\ln 3}^{\ln 10} \frac{(e^x - 3)^2}{2} dx = \frac{49}{2}.$$

c. On a :

$$\int_0^1 \frac{e^{-x} - 2}{e^x} dx = \int_0^1 -(-e^{-x})(e^{-x} - 2) dx = \left[-\frac{(e^{-x} - 2)^2}{2} \right]_0^1 = \frac{-e^{-2} + 4e^{-1} - 3}{2} = \frac{-1 + 4e - 3e^2}{2e^2}.$$