

EXERCICE 17

$$\begin{array}{lll} 1) I = \int_0^4 (x-3) dx & 3) I = \int_1^2 \left(t^2 + t - \frac{1}{t}\right) dt & 5) I = \int_{\ln 2}^{\ln 3} e^x dx \\ 2) I = \int_{-1}^2 (t^2 - 4t + 3) dt & 4) I = \int_0^2 \frac{3x}{(x^2+1)^2} dx & 6) I = \int_0^3 \frac{dt}{(2t+1)^2} \end{array}$$

EXERCICE 18

$$\begin{array}{lll} 1) I = \int_0^4 dx & 3) I = \int_{-1}^1 \frac{x}{x^2-4} dx & 5) I = \int_0^1 5e^{3x} dx \\ 2) I = \int_{-2}^{-1} \frac{x-3}{x} dx & 4) I = \int_1^2 \frac{1}{3x-2} dx & 6) I = \int_0^1 te^{t^2-1} dt \end{array}$$

EXERCICE 19

$$\begin{array}{l} 1) \text{ a) Trouver trois réel } a, b \text{ et } c \text{ tels que : } \frac{4x^2+7x+1}{x+2} = ax + b + \frac{c}{x+2} \\ \text{ b) En déduire : } I = \int_0^2 \frac{4x^2+7x+1}{x+2} dx \\ 2) \text{ a) Prouver que pour tout réel } x : \frac{1}{1+e^x} = 1 - \frac{e^x}{1+e^x} \\ \text{ b) En déduire : } I = \int_0^1 \frac{1}{1+e^x} dx \end{array}$$

EXERCICE 20

Comparer, sans les calculer les réels I et J .

$$1) I = \int_1^2 x e^x dx \qquad 2) J = \int_1^2 x^2 e^x dx$$