



## Énoncés des exercices

EXERCICE 1 [ [Indication](#) ] [ [Correction](#) ]

$$\text{Calculer } I = \int_0^{\frac{\pi}{2}} \cos^8 x \, dx.$$

EXERCICE 2 [ [Indication](#) ] [ [Correction](#) ]

$$\text{Calculer } J = \int_0^{\frac{\pi}{2}} \cos^7 x \, dx.$$

EXERCICE 3 [ [Indication](#) ] [ [Correction](#) ]

$$\text{Calculer } K = \int_0^{\frac{\pi}{4}} \tan^7 x \, dx.$$

EXERCICE 4 [ [Indication](#) ] [ [Correction](#) ]

$$\text{Calculer } I = \int_0^{3\pi} \sin x \sin 2x \sin 3x \, dx.$$

EXERCICE 5 [ [Indication](#) ] [ [Correction](#) ]

$$\text{Calculer } I = \int_0^{\frac{\pi}{2}} \frac{\cos^3 x}{\cos^3 x + \sin^3 x} \, dx.$$

EXERCICE 6 [ [Indication](#) ] [ [Correction](#) ]

$$\text{Calculer } I_\theta = \int_0^{\frac{\pi}{2}} \frac{dx}{1 + \cos \theta \cos x} \quad (\text{avec } \theta \in ]-\pi, +\pi[)$$

EXERCICE 7 [ [Indication](#) ] [ [Correction](#) ]

$$\text{Calculer } I = \int_0^{\frac{\pi}{4}} \frac{\cos x}{\cos x + \sin x} \, dx.$$