

PCSI – TD₁₈

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Exercice 1 :Donner une primitive sur \mathbb{R} des fonctions suivantes :

$$f_1(x) = \cos^2(x) \times \sin^4(x), \quad f_2(x) = \cos^3(x) \times \sin^4(x), \quad f_3(x) = \cosh^2(x), \quad f_4(x) = \sinh(x) \times \cosh^2(x),$$

$$f_5(x) = e^x \times \cos\left(x + \frac{\pi}{4}\right), \quad f_6(x) = e^x \times \cos(x) \times \sin^2(x).$$

Exercice 2 :

Déterminer des primitives des fonctions :

$$g_1(t) = \frac{\ln(t)}{t}, \quad g_2(t) = t \times e^{t^2}, \quad g_3(t) = \frac{e^{\sqrt{t}}}{\sqrt{t}}, \quad g_4(t) = \sin(t) \times e^{\cos(t)}, \quad g_5(t) = e^{t+e^t},$$

$$g_6(t) = \frac{\sin(t)}{2 + \cos(t)}, \quad g_7(t) = \frac{\tan(t)}{\cos(t)}, \quad g_8(t) = \frac{t + 1}{t^2 + 2t + 5}, \quad g_9(t) = \frac{2t + 1}{(t^2 + t + 5)^2}.$$