■ Calculer en utilisant les fonctions composées

$$\int x\left(x^2-1\right)^5 dx$$

$$\int \cos(x)\sin^2(x)\, dx$$

$$\int e^{2-u}\, du$$

$$\int \frac{\ln^3[x]}{x}\, dx$$

$$\int \frac{1}{\sqrt{3-2x}}\, dx$$

$$\int \frac{x+3}{x-1}\, dx$$

$$\int \frac{x^2-4}{x+1}\, dx$$

$$\int \frac{x+1}{x^2+1}\, dx$$

$$\int \frac{x^2-2}{x^2+1}\, dx$$

$$\int \sin^2(t)\, dt$$

$$\int \frac{4x}{\sqrt{3x^2+1}}\, dx$$

$$\int \frac{e^{\sqrt{x}}}{\sqrt{x}}\, dx$$

$$\int \sec^2(2x)\,\mathrm{tg}(2x)\, dx$$

■ Solutions

$$\int x\left(x^2-1\right)^5 dx \qquad t = x^2-1$$

$$\int \cos(x)\sin^2(x)\,dx = \frac{\sin(x)}{4} - \frac{1}{12}\sin(3x) + k$$

$$\int e^{2-u}\,du = -e^{2-u} + k$$

$$\int \frac{\ln^3[x]}{x}\,dx = \frac{\ln^4[x]}{4} + k$$

$$\int \frac{1}{\sqrt{3-2x}}\,dx = -\sqrt{3-2x} + k$$

$$\int \frac{x+3}{x-1}\,dx = x + 4\ln(|x-1|) + k$$

$$\int \frac{x^2-4}{x+1}\,dx = \frac{1}{2}(x+1)^2 - 2(x+1) - 3\ln(|x+1|) + k$$

$$\int \frac{x+1}{x^2+1}\,dx = \text{Arctg}(x) + \frac{1}{2}\ln(|x^2+1|) + k$$

$$\int \frac{x^2-2}{x^2+1}\,dx = x - 3\,\text{Arctg}(x) + k$$

$$\int \sin^2(t)\,dt = \frac{t}{2} - \frac{1}{4}\sin(2t) + k$$

$$\int \frac{4x}{\sqrt{3x^2+1}}\,dx = \frac{4}{3}\sqrt{3x^2+1} + k$$

$$\int \frac{e^{\sqrt{x}}}{\sqrt{x}}\,dx = 2e^{\sqrt{x}} + k$$

$$\int \sec^2(2x)\,\text{tg}(2x)\,dx = \frac{1}{4}\sec^2(2x) + k$$

remarque: $\text{séc}(x) = \frac{1}{\cos x}$