

Corrections Savoir Ed.3

Corrigé Exercice 7

1) $F_1(x) = \frac{6x^4}{4} - 4x = \frac{3}{2}x^4 - 4x$ | $G_1(x) = 2e^x - \frac{x^2}{2}$ | $H_1(x) = 2 \ln x - \frac{1}{3x}$ | $L_1(x) = 6\sqrt{x} + \frac{2}{3} \ln x$

$I_1(t) = \frac{t^3}{6} - \frac{t^2}{6} + t$ | $J_1(x) = \frac{-2}{2x^2} - \frac{1}{3} \ln x = \frac{-1}{x^2} - \frac{1}{3} \ln x$ | $K_1(x) = x^2 - 3x$ | $M_1(a) = 2a - a^3$

$N_1(x) = \sqrt{x}$ | $P_1(x) = 5x$ | $Q_1(\theta) = \frac{\theta^2}{2} - 2\sqrt{\theta}$ | $R_1(x) = \frac{1}{2}x$

2) On a : $f_2(x) = 4x^3 - x^2 - 16x + 4$ | On a : $g_2(x) = x - 2 + \frac{1}{3x}$ | $j_2(x) = \frac{4x^2 - 12x + 9}{x^3} = \frac{4}{x} - \frac{12}{x^2} + \frac{9}{x^3}$
 $\Rightarrow F_2(x) = x^4 - \frac{x^3}{3} - 8x^2 + 4x$ | $\Rightarrow G_2(x) = \frac{x^2}{2} - 2x + \frac{1}{3} \ln x$ | $\Rightarrow J_2(x) = 4 \ln x + \frac{12}{x} - \frac{9}{2x^2}$

$h_2(x) = 2 + 3e^x$ | Calculer les racines pour factoriser le numérateur : | $k_2(x) = \frac{e^x(1 + e^x)}{e^x + 1} = e^x$
 $\Rightarrow H_2(x) = 2x + 3e^x$ | $i_2(t) = \frac{(t+1)(t-2)}{t^2(t-2)} = \frac{t+1}{t^2} = \frac{1}{t} + \frac{1}{t^2}$ | $\Rightarrow K_2(x) = e^x$
 $\Rightarrow I_2(t) = \ln t - \frac{1}{t}$

