

$$1) \quad a(x) = -(2x-3)^4 \quad \Rightarrow a'(x) = -4(2x-3)^3 \times 2 = -8(2x-3)^3$$

$$c(x) = x \ln(x+2) \quad \Rightarrow c'(x) = \ln(x+2) + \frac{x}{x+2}$$

2) DP de  $3 \sin 2x - 2 \sin 3x$  en  $x=0$  ordre 3

$$\sin 2x \approx 2x - \frac{(2x)^3}{3!} = 2x - \frac{8x^3}{6}$$

$$\sin 3x \approx 3x - \frac{(3x)^3}{3!} = 3x - \frac{27x^3}{6}$$

$$\Rightarrow 3 \sin(2x) - 2 \sin(3x) \approx 3\left(2x - \frac{4}{3}x^3\right) - 2\left(3x - \frac{9}{2}x^3\right) = -4x^3 + 9x^3 = 5x^3$$