

STUDENT > f:=x->1/6*x^3-1/6*x^2-8/3*x+8/3;f(1);factor(f(x));

$$f := x \rightarrow \frac{1}{6}x^3 - \frac{1}{6}x^2 - \frac{8}{3}x + \frac{8}{3}$$

$$f(1) = 0$$

$$f(x) = \frac{1}{6}(x-1)(x-4)(x+4)$$

STUDENT > f1(x):=expand(diff(f(x),x));factor(f1(x));

$$f'(x) = f1(x) := \frac{1}{2}x^2 - \frac{1}{3}x - \frac{8}{3}$$

$$f'(x) = \frac{1}{6}(x+2)(3x-8)$$

STUDENT > f2(x):=expand(diff(f1(x),x));f(1/3);

Dérivée Seconde de f : $f''(x) = f2(x) := x - \frac{1}{3}$

$$f(1/3) = \frac{143}{81}$$

STUDENT > plot([f(x),f1(x),f2(x)],x=-12..12,y=-12..12,thickness=2);

