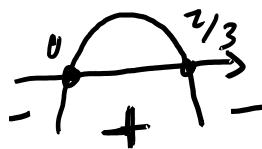


$$5) f(x) = 3x^2 - 3x^3 \quad I = \mathbb{R}$$

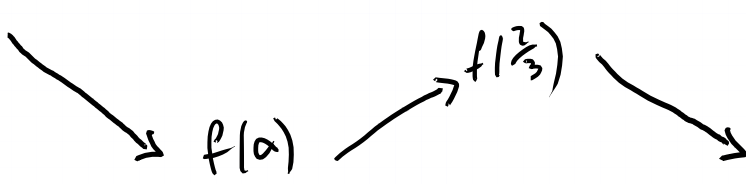
$$f'(x) = 6x - 9x^2 = -9x^2 + 6x$$

Signe de  $f'$ :  $a = -9$    $b = 6$   $c = 0$

$$\Delta = 6^2 - 4 \times (-9) \times 0 = 36 > 0$$


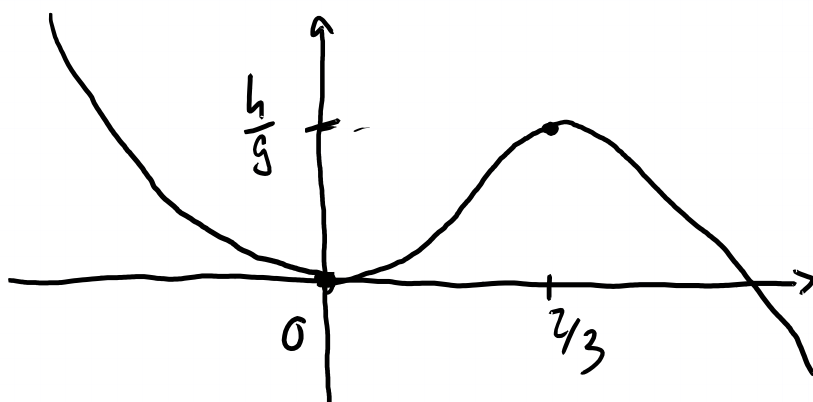
$$x_1 = \frac{-6 - 6}{-18} = \frac{-12}{-18} = \frac{2}{3} \quad x_2 = \frac{-6 + 6}{-18} = 0$$

Tableau de variations:

$x$	$-\infty$	$0$	$\frac{2}{3}$	$+\infty$	
$f'$	$-$	$\phi$	$+$	$\phi$	$-$
$f$					

$$f(0) = 0$$

$$f\left(\frac{2}{3}\right) = 3 \times \frac{4}{9} - 3 \times \frac{8}{27} = \frac{4}{3} - \frac{8}{9} = \frac{12-8}{9} = \frac{4}{9}$$



0 est un min en  $x = 0$

$\frac{4}{9}$  est un max en  $x = \frac{2}{3}$ .