

$$f(x) = \frac{1,6x^2 + 4x + 4000}{x} = \frac{u}{v}$$

$$\left(\frac{u}{v}\right)' = \frac{u'v - uv'}{v^2}$$

$x > 0$

Croissance

$$f'(x) = \frac{(1,6x^2 + 4x + 4000)' \cdot x - (1,6x^2 + 4x + 4000) \cdot 1}{x^2}$$

$$f'(x) = \frac{(3,2x + 4)x - 1,6x^2 - 4x - 4000}{x^2}$$

$$= \frac{\cancel{3,2x^2} + \cancel{4x} - 1,6x^2 - \cancel{4x} - 4000}{x^2}$$

$$= \frac{1,6x^2 - 4000}{x^2}$$

$$\frac{P(x)}{Q(x)} = 0$$

si  $P(x) = 0$   
et que  $Q(x) \neq 0$

$$D_{f'} = \mathbb{R} - \{0\} = \mathbb{R}^*$$

$$f'(x) = 0 \text{ si } x \neq 0 \checkmark \text{ (} x > 0 \text{) consigne}$$

$$\text{et que } 1,6x^2 - 4000 = 0$$

$$1,6x^2 + 0x - 4000 = 0$$

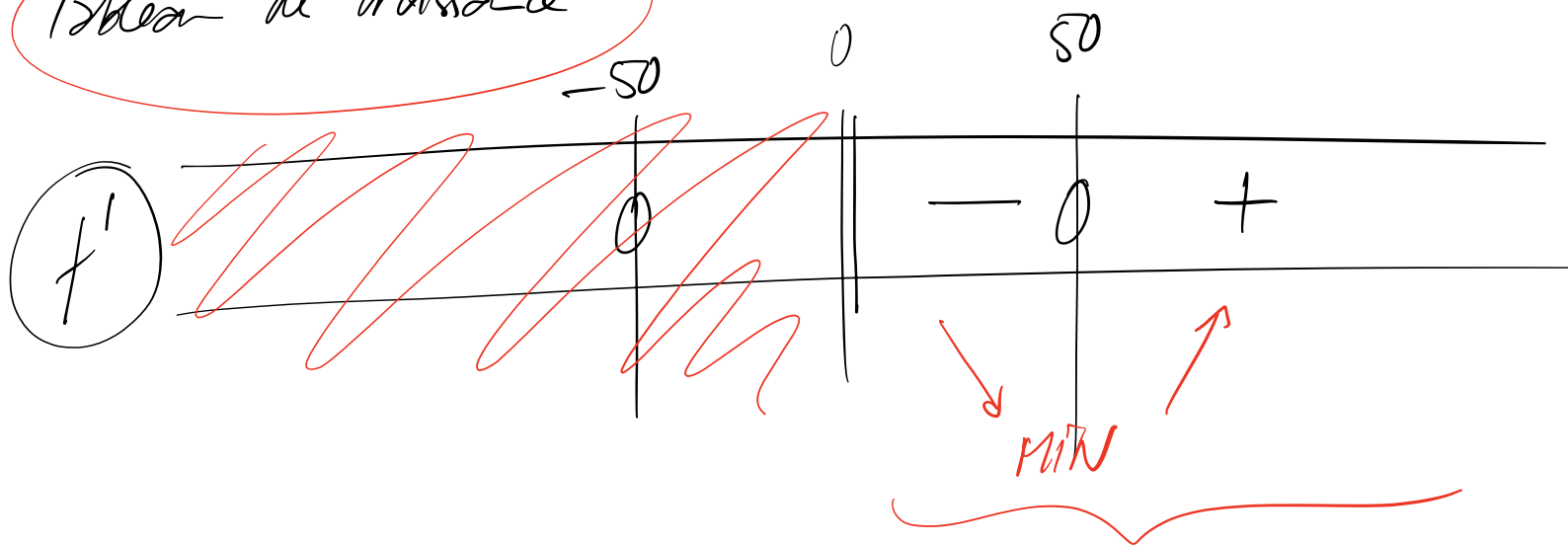
$$X = \frac{-0 \pm \sqrt{0^2 - 4 \cdot 1,6 \cdot (-4000)}}{2 \cdot 1,6}$$

$$X = \frac{\pm \sqrt{25600}}{3,2} = \pm \frac{160}{3,2} = \pm \frac{1600}{32}$$

$$= \pm \frac{200}{4} = \pm 50$$

$$f'(x) = 0 \Leftrightarrow x = \pm 50$$

Tableau de croissance



$$\frac{1,6x^2 - 4000}{x^2}$$

MIN en  $(50; f(50))$

