

14/01/21.

Seconde GT: Fonctions de références.

n°15:

a) $f_1(x) = -(x+2)^2 - 3$.

Forme canonique:

$= -1 \times (x - (-2))^2 - 3$.

$a = -1$ $S(-2; -3)$
 $\alpha = -2$ "Vers le bas"
 $\beta = -3$



$f(x) = a(x - \alpha)^2 + \beta$.

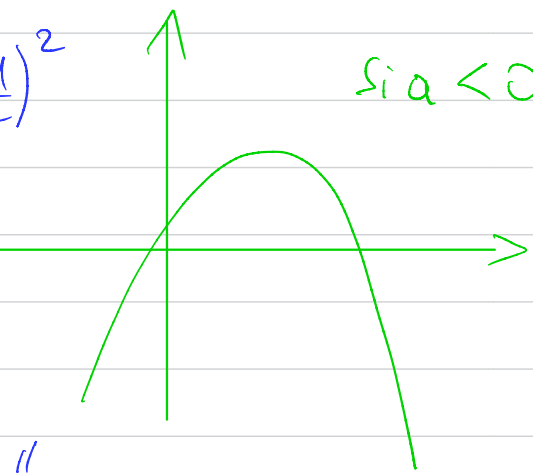
$S(\alpha; \beta)$ est le sommet de la parabole.
si $a > 0$, la parabole est tournée vers le haut.

b) $f_2(x) = \frac{25}{2} + 2(x - \frac{1}{2})^2$

si $a < 0$

$= 2(x - \frac{1}{2})^2 + \frac{25}{2}$.

$a = 2$ $S(\frac{1}{2}; \frac{25}{2})$
 $\alpha = \frac{1}{2}$
 $\beta = \frac{25}{2}$ "Vers le haut".



c) $f_3(x) = -4(x - 3,5)^2 + 1,5$.

$a = -4 < 0$ $\beta = 1,5$.
 $\alpha = 3,5$

$S(3,5; 1,5)$.

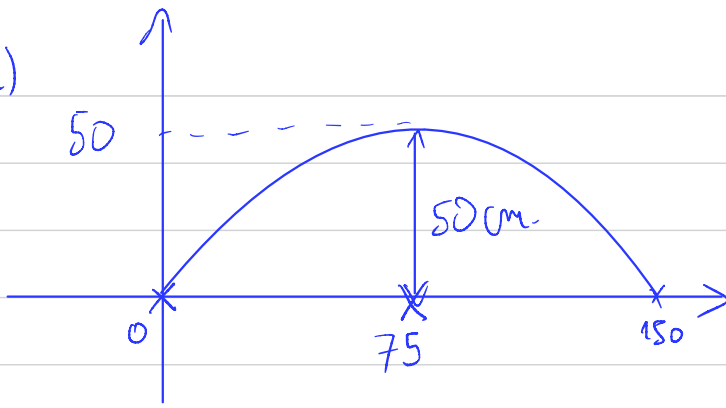
"Vers le bas".

d) $f_4(x) = 7 + x^2 = 1 \times (x - 0)^2 + 7$. $S(0; 7)$.

$a = 1$ $\beta = 7$ "Vers le haut".
 $\alpha = 0$

n°19.

a)



$$f(x) = a(x - \alpha)^2 + \beta$$

$$f(x) = a(x - 75)^2 + 50$$



$$f(150) = 0$$

$$a \times (150 - 75)^2 + 50 = 0$$

$$a \times 75^2 + 50 = 0$$

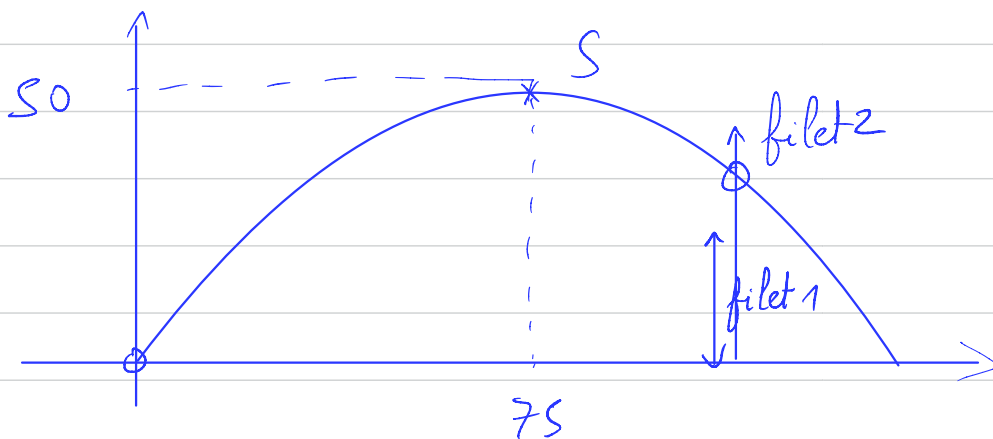
$$a \times 75^2 = -50$$

$$a = \frac{-50}{75 \times 75} = \frac{-2 \times 2}{25 \times 3 \times 25 \times 3}$$

$$a = \frac{-2}{225}$$

$$f(x) = \frac{-2}{225} \times (x - 75)^2 + 50$$

b)



$$f(120) = \frac{-2}{225} \times (120 - 75)^2 + 50$$

$$= \frac{-2}{225} \times 45^2 + 50.$$

$$= \frac{-2}{25 \times 9} \times (9 \times 5)^2 + 50$$

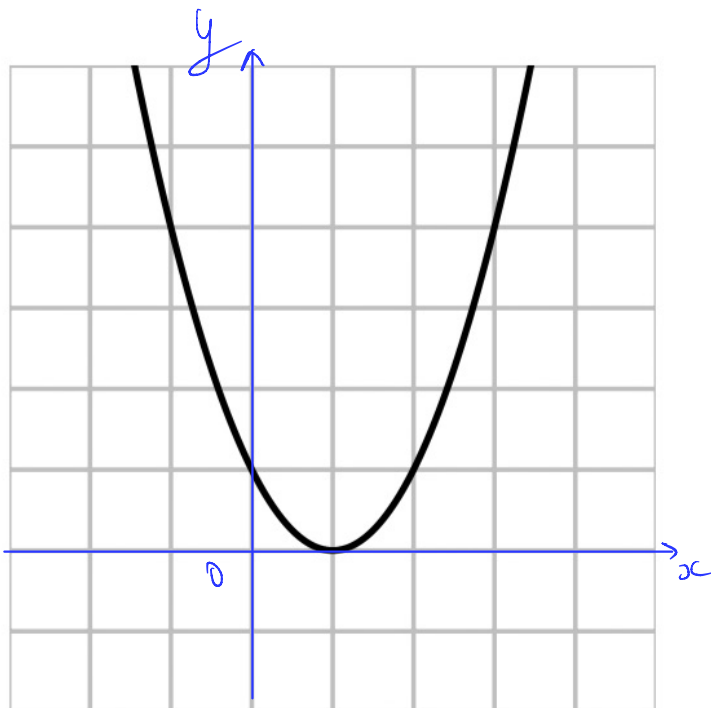
$$= \frac{-2}{25 \times 9} \times 9 \times 9 \times 25 + 50.$$

$$= -18 + 50 = 32 > 15,25 \text{ cm.}$$

nº20: $f(x) = x^2 - 2x + 1 = (x-1)^2 = 1 \times (x-1)^2 + 0.$

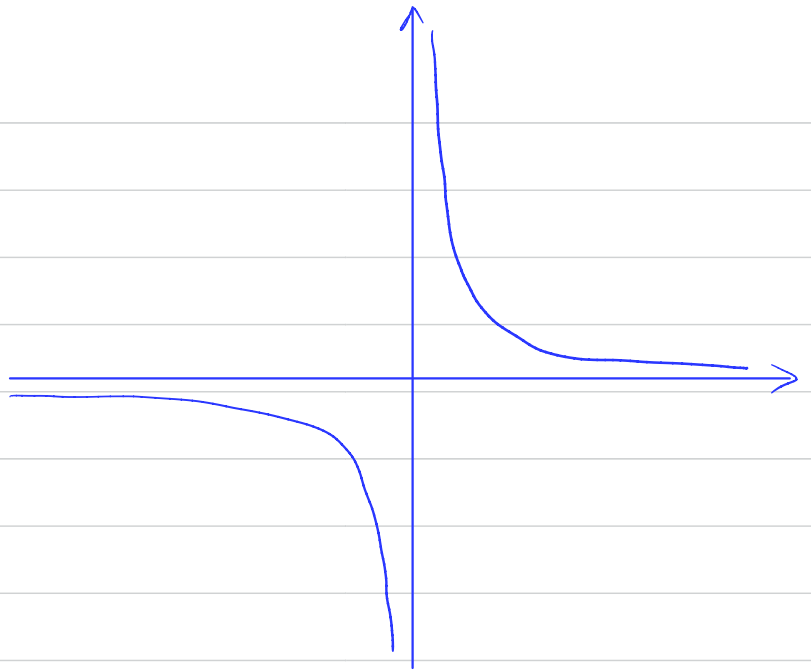
$$= x^2 - 2x \times 1 + 1^2$$
$$= a^2 - 2x \times a \times b + b^2$$
$$= (a-b)^2$$

$a = 1$
 $x = 1$
 $\beta = 0.$



nº 30:

$$f(x) = \frac{1}{x}$$



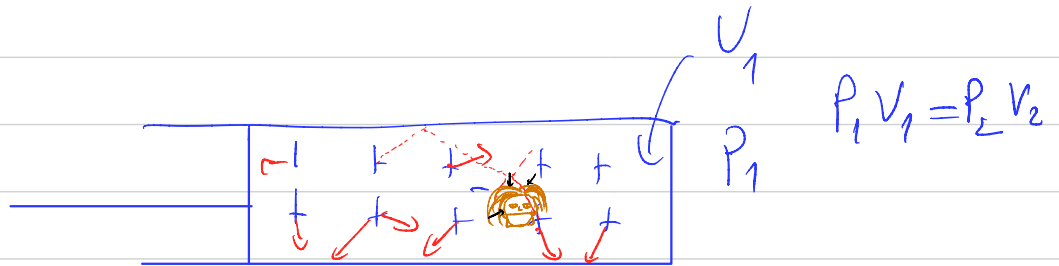
$$f_1(x) \leftrightarrow B$$

$$f_2(x) = 2 - \frac{1}{x} \leftrightarrow C$$

$$f_3(x) \rightarrow D$$

$$f_4(x) \rightarrow A$$

nº 28

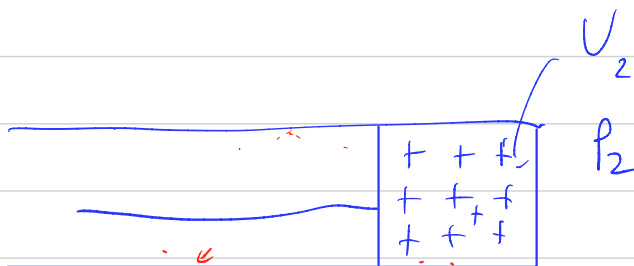


$$\frac{10}{5} = 2$$

$$P = \frac{F}{S}$$

$$F = P \times S = 10^5 \times 1$$

$$= 10^5 \text{ N.}$$



a) $P \times V = 1$

$$P = \frac{1}{V}$$

b) $P = \frac{1}{0,5} = 2 \text{ bars.}$

$$P = \frac{1}{5} = 0,2 \text{ bar.}$$