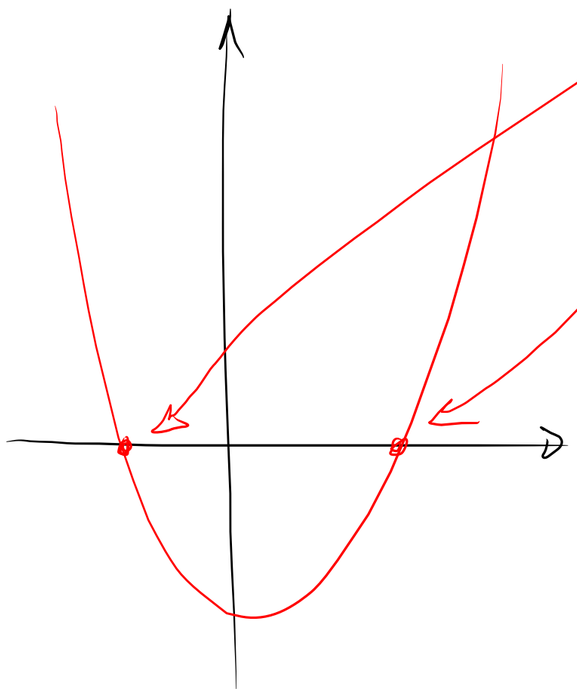
$$f(x) = 2x^2 + 6x + c$$

FONCTION QUADRATIONE

$$f(x) = 0 \iff x = \frac{-6 \pm \sqrt{6^2 - 4ac}}{2a}$$



$$\Delta = 6^2 - 4ac$$

$$x = \frac{-6 \pm \sqrt{\Delta}}{2a}$$

$$ax^2+bx+c =$$

$$a\left(x^2+\frac{b}{a}x+\frac{c}{a}\right) =$$

$$a\left(x^2+\frac{2b}{2a}x+\frac{c}{a}\right) =$$

$$a\left(x^2+\frac{b}{2a}\cdot\frac{2}{1}x+\frac{c}{a}\right) =$$

$$a\left(x^2+2\cdot x\cdot\frac{b}{2a}+\frac{c}{a}\right) =$$

$$a\left(x^2+2x\frac{b}{2a}+\frac{b^2}{4a^2}-\frac{b^2}{4a^2}+\frac{c}{a}\right) =$$

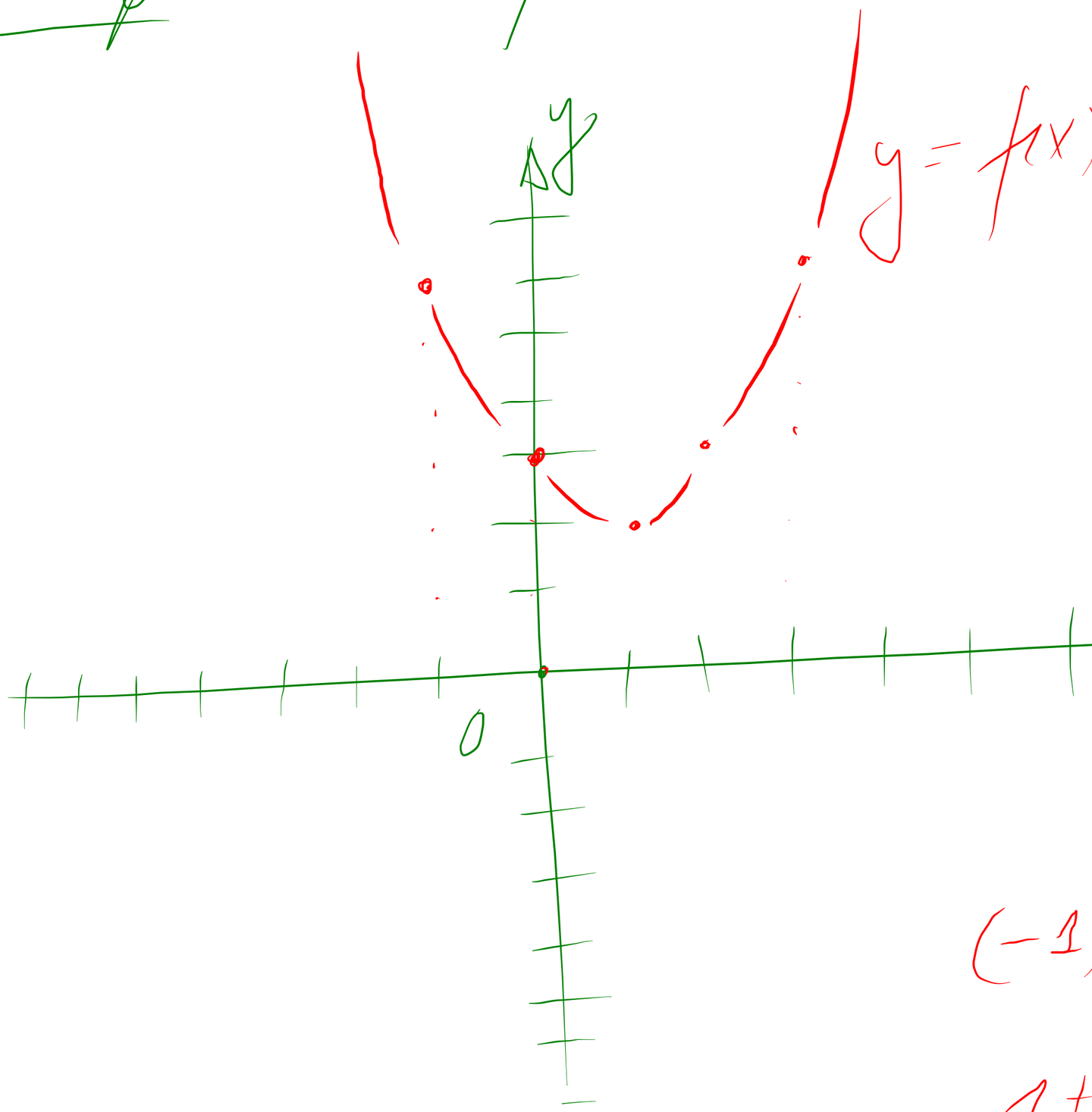
$A^2 + 2AB + B^2$

$(A+B)^2$

$$a\left(x+\frac{b}{2a}\right)^2-\left(\frac{b^2}{4a^2}-\frac{c}{a}\right)$$

$\Rightarrow x = -\frac{b}{2a}$ donne l'abscisse du max.

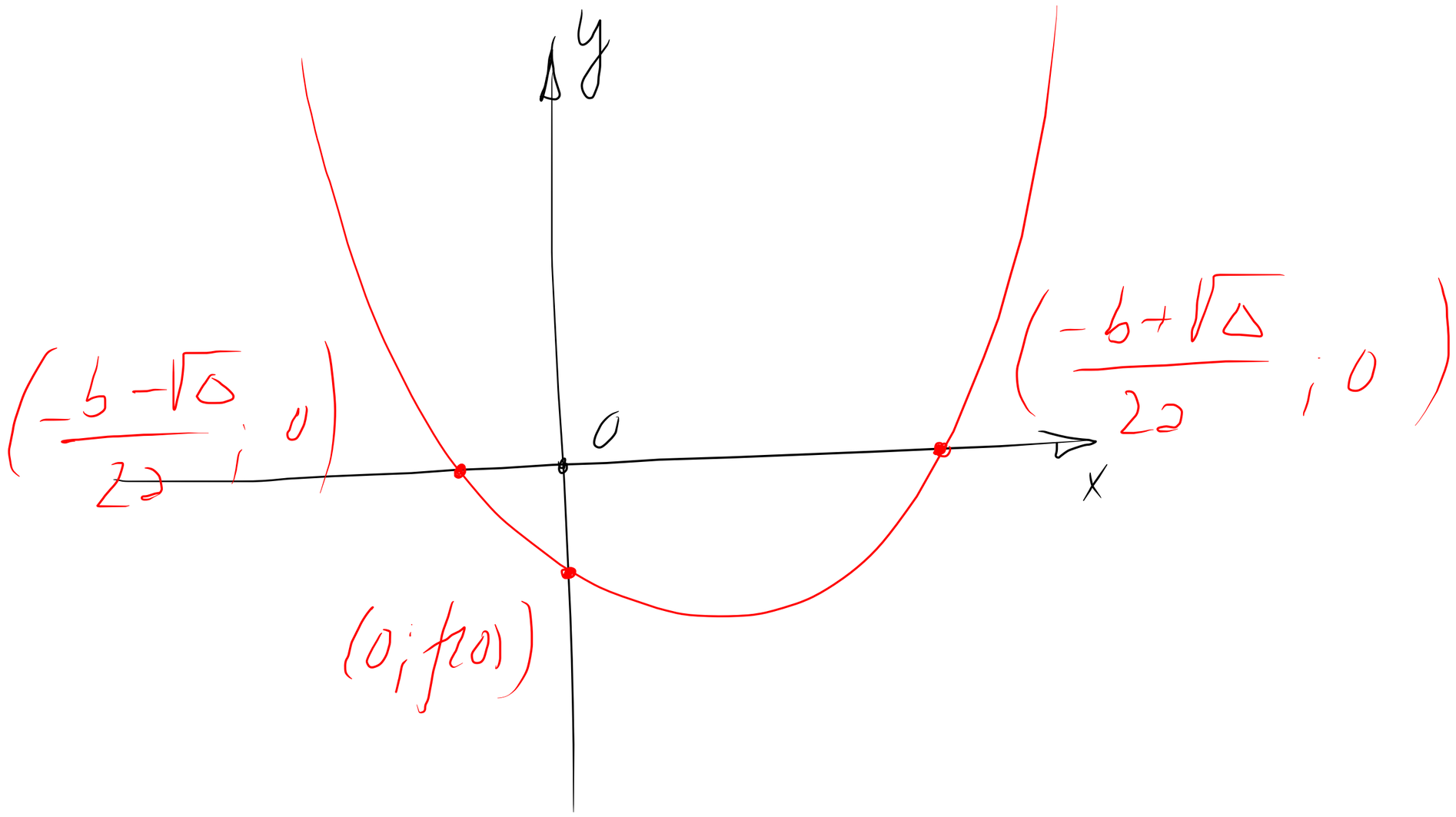
Example: $f(x) = x^2 - 2x + 3$



x	f(x)
(0	3)
1	2
-1	6
2	3
3	6

$(-1)^2 - 2(-1) + 3 =$

$1 + 2 + 3 = 6$



$$f(x)=ax^2+bx+c$$

$$\Delta=b^2-4ac$$