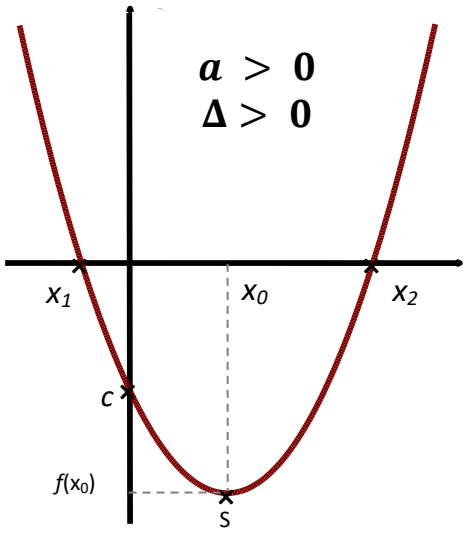
- Cas $\Delta > 0$

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

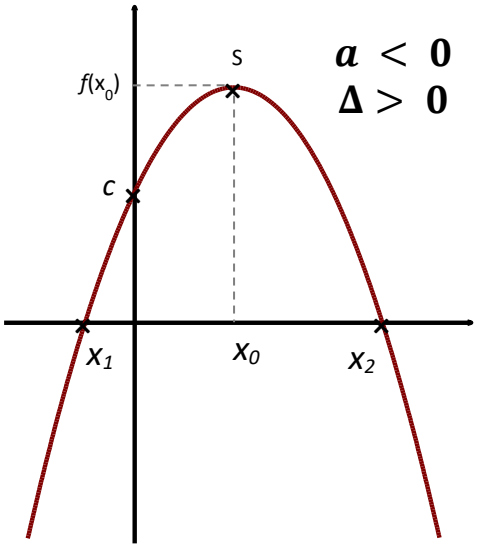



**Formulaire**

$\Delta = b^2 - 4ac$

$x_{1,2} = \frac{-b \mp \sqrt{\Delta}}{2a}$

$x_0 = \frac{-b}{2a}$




- Tableau de signe

| $x$ | $-\infty$ $\quad$ $+\infty$ |
|---|---|
| $ax^2 + bx + c$<br>$a > 0$ | |

| $x$ | $-\infty$ $\quad$ $+\infty$ |
|---|---|
| $ax^2 + bx + c$<br>$a < 0$ | |

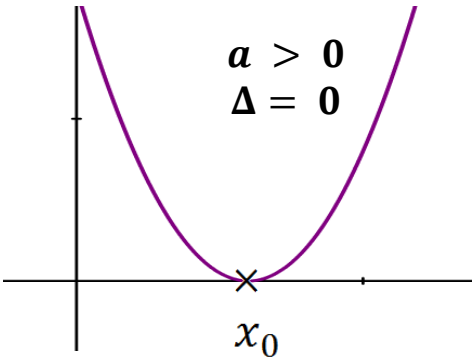
- Tableau de variation

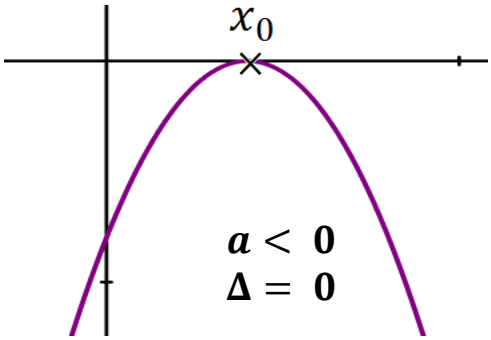
| $x$ | $-\infty$ $\quad$ $+\infty$ |
|---|---|
| $ax^2 + bx + c$<br>$a > 0$ | |

| $x$ | $-\infty$ $\quad$ $+\infty$ |
|---|---|
| $ax^2 + bx + c$<br>$a < 0$ | |

- Extrema :

- Cas $\Delta = 0$




- Tableau de signe

| $x$ | $-\infty$ $\quad$ $+\infty$ |
|---|---|
| $ax^2 + bx + c$<br>$a > 0$ | |

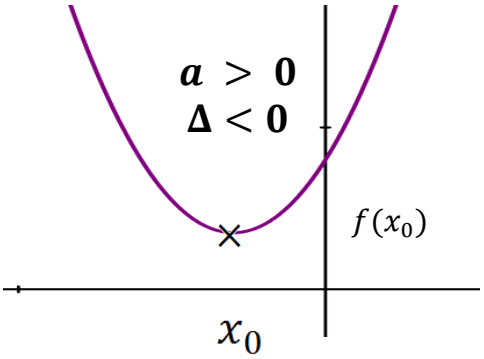
| $x$ | $-\infty$ $\quad$ $+\infty$ |
|---|---|
| $ax^2 + bx + c$<br>$a < 0$ | |

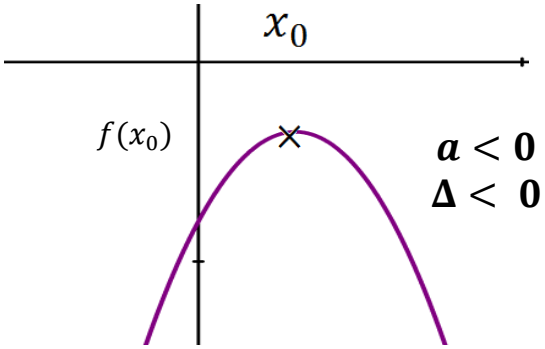
- Tableau de variation

| $x$ | $-\infty$ $\quad$ $+\infty$ |
|---|---|
| $ax^2 + bx + c$<br>$a > 0$ | |

| $x$ | $-\infty$ $\quad$ $+\infty$ |
|---|---|
| $ax^2 + bx + c$<br>$a < 0$ | |

- Cas $\Delta < 0$




- Tableau de signe

| $x$ | $-\infty$ $\quad$ $+\infty$ |
|---|---|
| $ax^2 + bx + c$<br>$a > 0$ | |

| $x$ | $-\infty$ $\quad$ $+\infty$ |
|---|---|
| $ax^2 + bx + c$<br>$a < 0$ | |

- Tableau de variation

| $x$ | $-\infty$ $\quad$ $+\infty$ |
|---|---|
| $ax^2 + bx + c$<br>$a > 0$ | |

| $x$ | $-\infty$ $\quad$ $+\infty$ |
|---|---|
| $ax^2 + bx + c$<br>$a < 0$ | |