

# Parabola

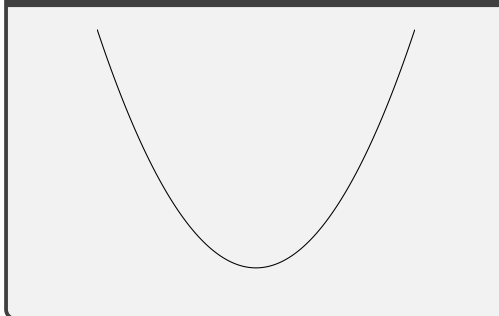
## Equazione

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

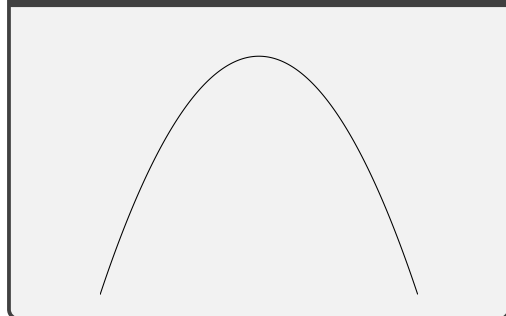
## Concavità

$$\begin{cases} a > 0 & \text{Rivolta verso l'alto} \\ a < 0 & \text{Rivolta verso il basso} \end{cases}$$

## Concavità verso l'alto



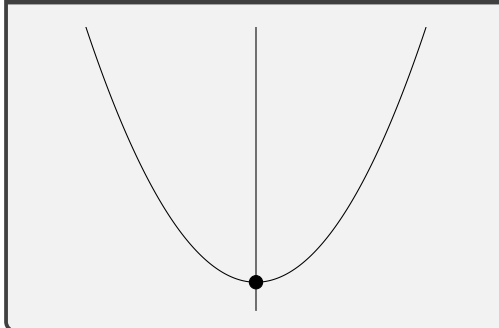
## Concavità verso il basso



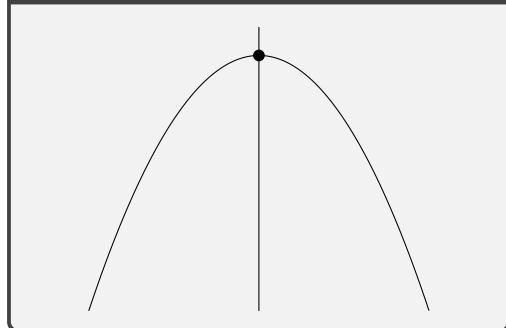
## Vertice

$$\begin{cases} x = -\frac{b}{2a} \\ y = -\frac{\Delta}{4a} \\ \Delta = b^2 - 4ac \end{cases}$$

## Vertice a positiva



## Vertice a negativa



## Intersezione asse x. Delta positivo

$$\begin{cases} x_1 = \frac{-b + \sqrt{b^2 - 4ac}}{2a} \\ x_2 = \frac{-b - \sqrt{b^2 - 4ac}}{2a} \end{cases}$$

$$A(x_1, 0)$$

$$B(x_2, 0)$$

## Intersezione asse x. Delta zero

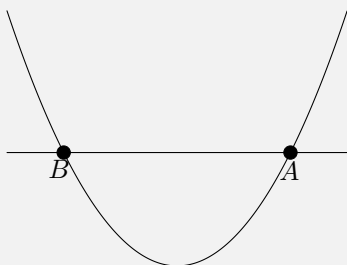
$$\begin{cases} x_1 = \frac{-b}{2a} \\ x_2 = \frac{-b}{2a} \end{cases}$$

$$A(x_1, 0)$$

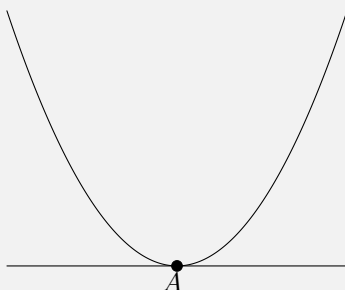
## Intersezione asse x. Delta negativo

Nessuna soluzione

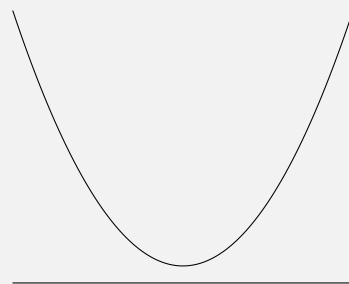
## Soluzioni distinte



## Soluzioni coincidenti



## Nessuna Soluzione

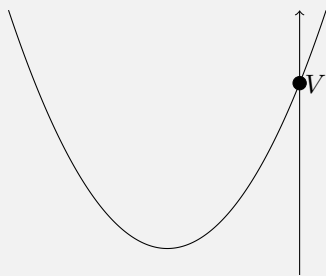


### Intersezione asse y

$$\begin{cases} y = ax^2 + bx + c \\ x = 0 \end{cases}$$

$C(0, c)$

### Intersezione asse y



# Disegnare una parabola

