

## Caratteristiche delle coniche, scritte in forma canonica

### La parabola $y=ax^2+bx+c$

Vertice(V)

$$V\left(-\frac{b}{2a}; \frac{4ac-b^2}{4a}\right)$$

Fuoco(F)

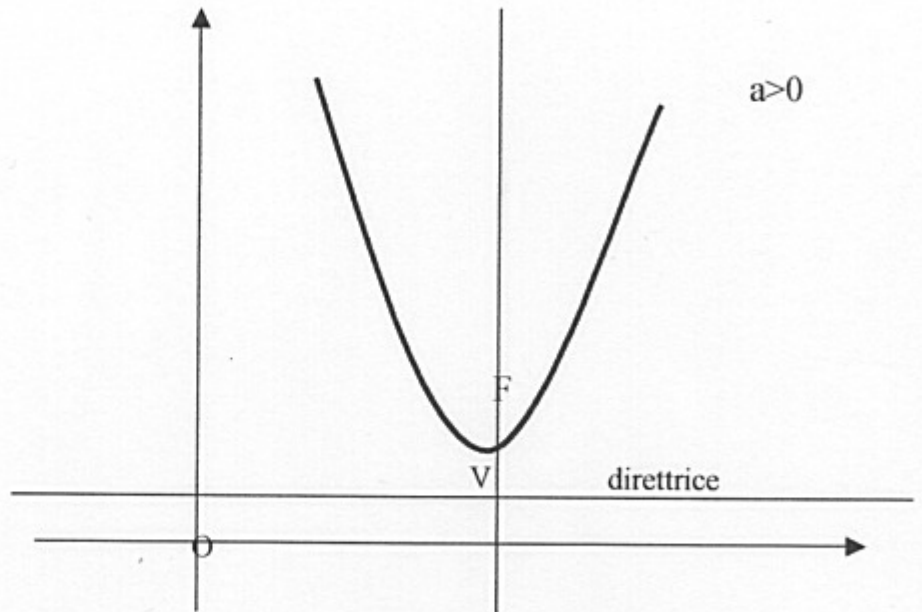
$$F\left(-\frac{b}{2a}; \frac{4ac-b^2+1}{4a}\right)$$

Direttrice

$$y = \frac{4ac-b^2-1}{4a}$$

asse di simmetria

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



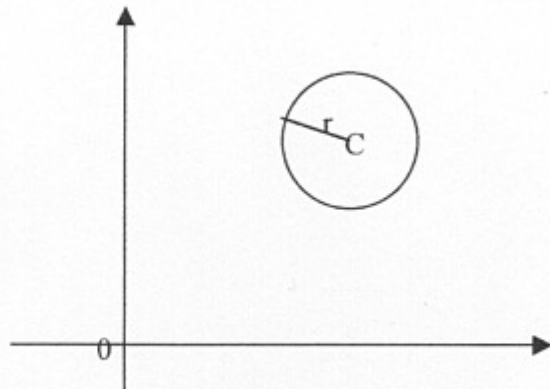
### La circonferenza $x^2+y^2+ax+by+c=0$

Centro(C)

$$C\left(\frac{-a}{2}, \frac{-b}{2}\right)$$

Raggio(r)

$$r = \sqrt{\frac{a^2}{4} + \frac{b^2}{4} - c}$$



## Ellisse

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$$

Vertici

$A_1(a,0)$

$A_2(-a,0)$

$B_1(0,b)$

$B_2(0,-b)$

Fuochi

$F_1(c,0)$

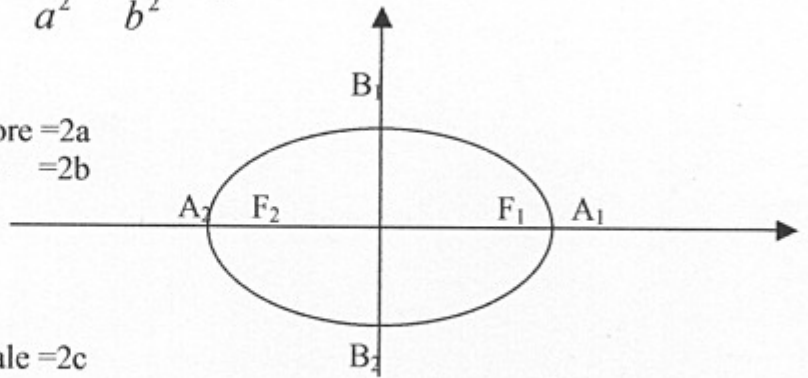
$F_2(-c,0)$

$$c = \pm\sqrt{a^2 - b^2}$$

$A_1 A_2$  asse maggiore  $= 2a$

$B_1 B_2$  asse minore  $= 2b$

$F_1 F_2$  distanza focale  $= 2c$



## Iperbole

$$\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$$

Vertici

$A_1(a,0)$

$A_2(-a,0)$

Fuochi

$F_1(c,0)$

$F_2(-c,0)$

$$c = \pm\sqrt{a^2 + b^2}$$

$$\text{Asintoti } y = \pm \frac{b}{a} x$$

$A_1 A_2$  asse trasverso  $= 2a$

$B_1 B_2$  asse non trasverso  $= 2b$

$F_1 F_2$  distanza focale  $= 2c$

