

$$\begin{cases} xy - x - 2y - 4 = 0 & \gamma \\ x + 2y + 2k = 0 & R \text{ (fascio di rette improprio)} \end{cases}$$

$$\begin{cases} -4 \leq x \leq 0 \\ -2 \leq y \leq 0 \end{cases}$$

Ma sostituendo la "x" di R nella "x" di  $\gamma$ .....

$$\begin{cases} x = -2y - 2k \\ -2y^2 - 2yk + 2y + 2k - 2y - 4 = 0 \quad ; \quad y^2 + yk - k + 2 = 0 \end{cases}$$

..... si ottiene un'equazione che rappresenta un fascio di "P"  
 Poiché ho trovato un'equazione in "y", prendo i limiti della "y"

$$\begin{cases} y^2 + yk - k + 2 = 0 \\ -2 \leq y \leq 0 \end{cases}$$

### Discussione

$a > 0$

$\forall k$

$\Delta \geq 0$

$k^2 + 4k - 8 \geq 0$  ;  $k = -2 \pm \sqrt{4+8}$  ;  $k = -2 \pm 2\sqrt{3}$  ;  $-2-2\sqrt{3} < k < -2+2\sqrt{3}$

$f_a \geq 0$

$4 - 2k - k + 2 \geq 0$  ;  $k \leq 2$

$f_b \geq 0$

$-k + 2 \geq 0$  ;  $k \leq 2$

$x_r \geq 2$

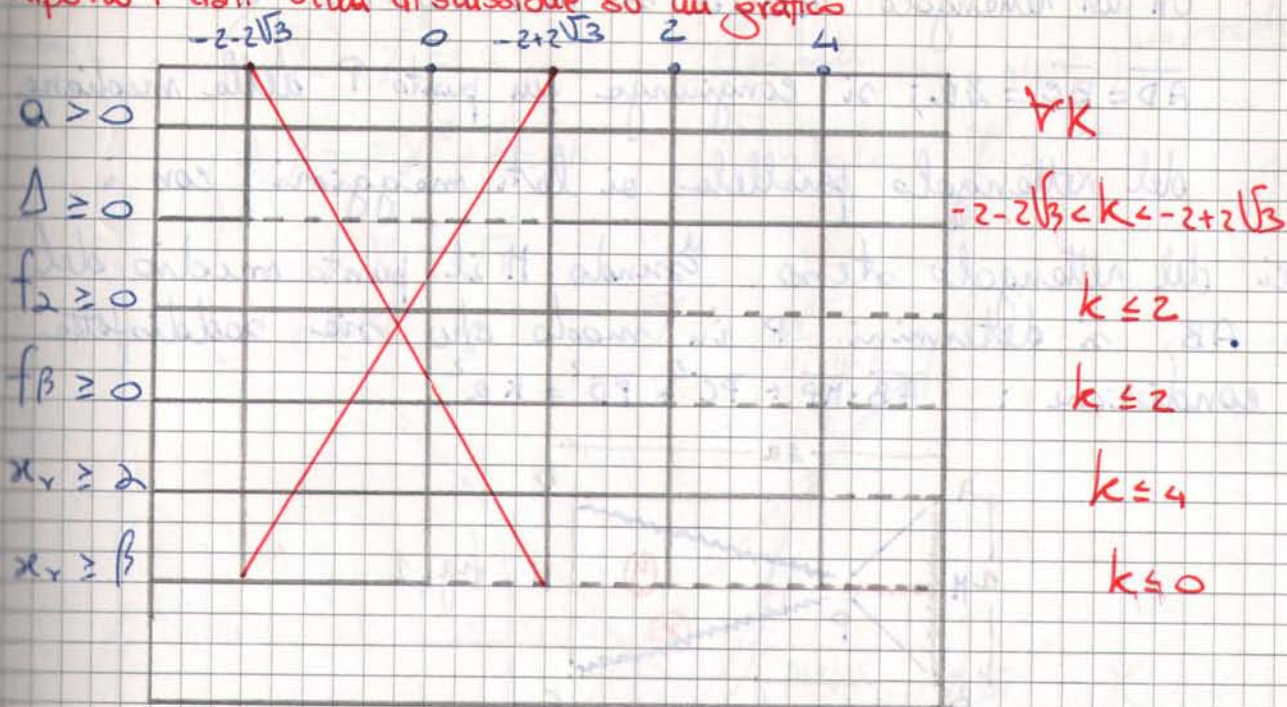
$-\frac{k}{2} \geq -2$  ;  $k \leq 4$

$x_r \geq \beta$

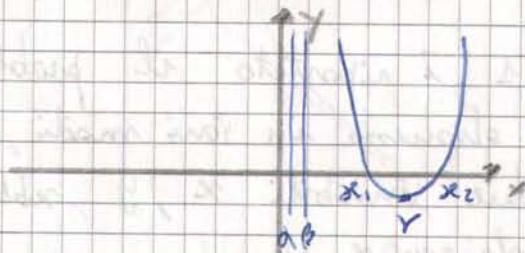
$-\frac{k}{2} \geq 0$  ;  $k \leq 0$



Riporto i dati della discussione su un grafico

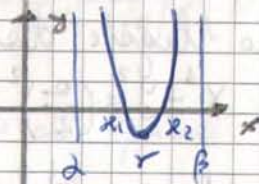


Per  $k < -2-2\sqrt{3}$



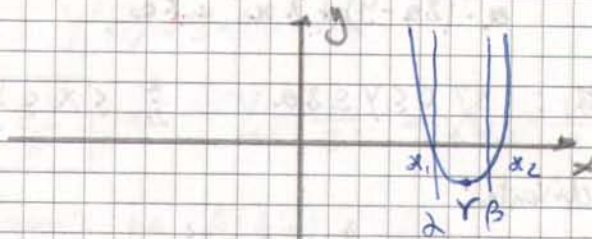
1 sol.

Per  $-2+2\sqrt{3} < k < 2$



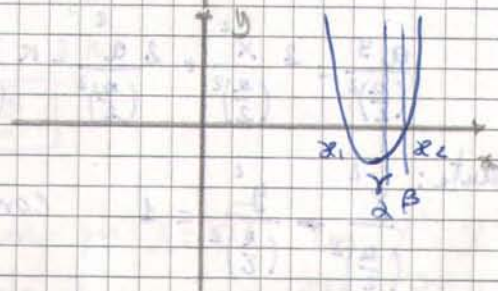
2 sol.

Per  $2 < k < 4$



1 sol.

Per  $k > 4$



1 sol.