

N21 PAG 462

$k = ?$

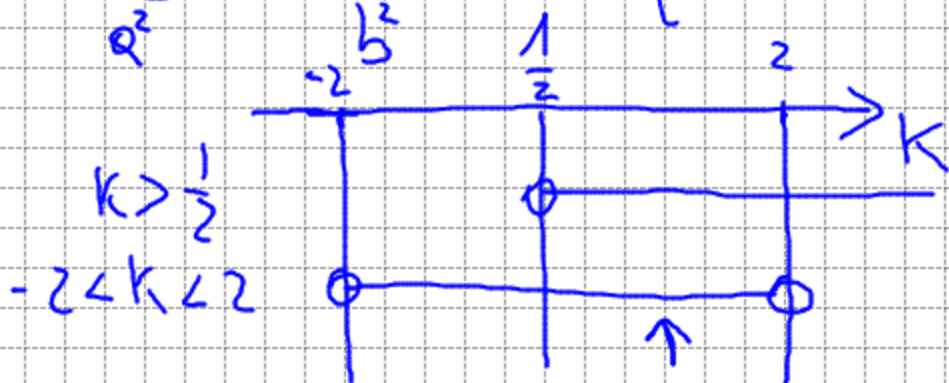
$$\frac{x^2}{2k-1} + \frac{y^2}{k^2-4} = 1$$

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

a) iperbole

$$\frac{x^2}{\underbrace{2k-1}_{a^2}} - \frac{y^2}{\underbrace{4-k^2}_{b^2}} = 1$$

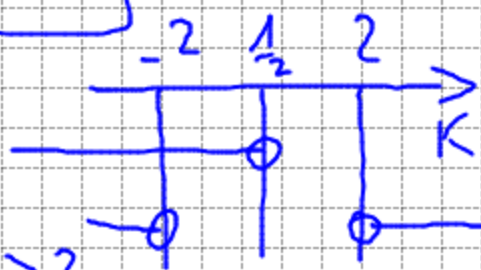
$$\begin{cases} 2k-1 > 0 \\ 4-k^2 > 0 \end{cases} \Rightarrow \begin{cases} k > \frac{1}{2} \\ -2 < k < 2 \end{cases}$$



$$\boxed{\frac{1}{2} < k < 2}$$

$$\begin{cases} 1-2k > 0 \\ k^2-4 > 0 \end{cases}$$

$$\begin{cases} k < \frac{1}{2} \\ k < -2 \vee k > 2 \end{cases}$$



$$\boxed{k < -2}$$

d) $F(2; 0)$

$$2k-1 + k - k^2 = 4$$

$$-k^2 + 2k - 1 = 0$$

$$k^2 - 2k + 1 = 0 \quad k = \frac{1 \pm \sqrt{1-1}}{1} = 1$$