3. $\left(\frac{x^2}{y^2}+\frac{y^2}{x^2}-\frac{17}{4}\right)\cdot \sin\sqrt{x^2+y^2}\le 0$

$\frac{x^2}{y^2}+\frac{y^2}{x^2}-\frac{17}{4}=0 \quad \Big| \quad \alpha := \frac{x^2}{y^2}$

$\alpha + \frac{1}{\alpha} - \frac{17}{4} = 0$

$\alpha^2 - \frac{17}{4}\alpha + 1 = 0$

$\alpha_{1,2} = \frac{\frac{17}{4} \pm \sqrt{\left(\frac{17}{4}\right)^2 - 4}}{2} = \frac{\frac{17}{4} \pm \frac{15}{4}}{2} \begin{cases} 4 \\ \frac{1}{4} \end{cases}$

$\left(\frac{x}{y}\right)^2 = 4 \iff |y| = \frac{|x|}{2}, \quad \left(\frac{x}{y}\right)^2 = \frac{1}{4} \iff |y| = 2|x|$

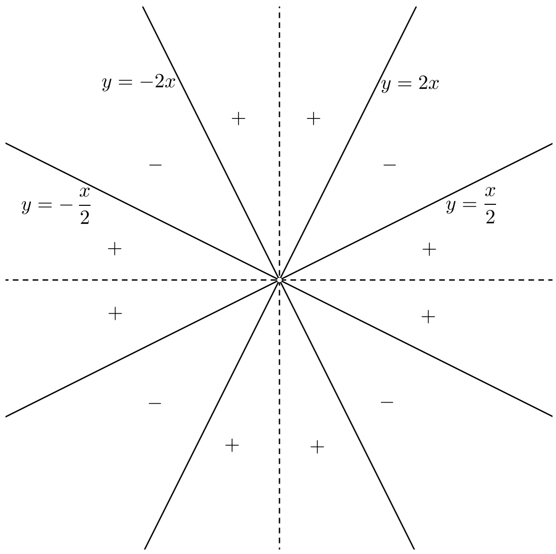
$\sin\sqrt{x^2+y^2} = 0$

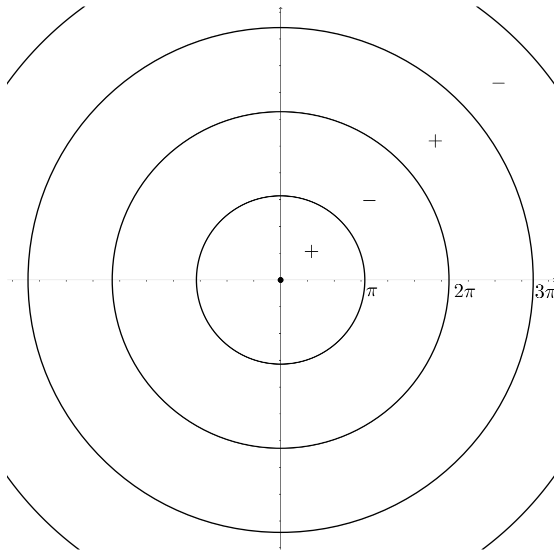
$\sqrt{x^2+y^2} = k\pi, \quad k \in \mathbb{N}_0$

$x^2+y^2 = (k\pi)^2$

$\sin\sqrt{x^2+y^2} > 0 \iff$

$\iff x^2+y^2 \in \left((2k\pi)^2, (2k+1)^2\pi^2\right)$





výsledek (řešení černě)