

$$I_n I_{n+1} = \frac{\pi}{2(n+1)}$$

$$I_0 = \frac{\pi}{2}$$

$$I_0 I_1 = \frac{\pi}{2} \rightarrow I_0 = 1$$

$$I_1 I_2 = \frac{\pi}{4} \rightarrow I_1 = \frac{\pi}{4}$$

$$I_2 I_3 = \frac{\pi}{6} \rightarrow I_3 = \frac{\pi}{4} \cdot \frac{6}{\pi} = \frac{2}{3} > \frac{1}{2}$$

$$I_3 I_4 = \frac{\pi}{8} \rightarrow I_4 = \frac{\pi}{8} \cdot \frac{3}{2} = \frac{3\pi}{16} > \frac{3}{16} > \frac{1}{2}$$

$$I_4 I_5 = \frac{\pi}{10} \rightarrow I_5 = \frac{\pi}{10} \cdot \frac{16}{3\pi} = \frac{8}{15} > \frac{1}{2}$$

$$I_5 I_6 = \frac{\pi}{12} \rightarrow I_6 = \frac{\pi}{12} \cdot \frac{15}{8} = \frac{5\pi}{32} < \frac{5 \cdot 3,15}{32} \sim 0,492 < \frac{1}{2}$$

donc  $\boxed{n_0 = 5}$