

# Epicykloida – predĺžená

$c > r > 0, R > 0$

$$x = (R+r) \cos \frac{rt}{R} - c \cos \frac{(R+r)t}{R}, \quad y = (R+r) \sin \frac{rt}{R} - c \sin \frac{(R+r)t}{R}, \quad t \in R.$$

$$x = (R+r) \cos \varphi - c \cos \frac{(R+r)\varphi}{r}, \quad y = (R+r) \sin \varphi - c \sin \frac{(R+r)\varphi}{r}, \quad \varphi \in R.$$

$$\begin{aligned} x &= (1+\sqrt{7})r \cos \frac{t}{\sqrt{7}} - 5r \cos \frac{(1+\sqrt{7})t}{\sqrt{7}} \\ y &= (1+\sqrt{7})r \sin \frac{t}{\sqrt{7}} - 5r \sin \frac{(1+\sqrt{7})t}{\sqrt{7}} \\ t &\in \langle 0; 16.4037\pi \rangle \end{aligned}$$

$$\begin{aligned} x &= (1+\sqrt{7})r \cos \varphi - 5r \cos (1+\sqrt{7})\varphi \\ y &= (1+\sqrt{7})r \sin \varphi - 5r \sin (1+\sqrt{7})\varphi \\ \varphi &\in \langle 0; 6.2\pi \rangle \end{aligned}$$

$$R = \sqrt{7}r, \quad c = 5r$$