

Epicykloida – obyčajná

$c=r$, $R>0$, $r>0$

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

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

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

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

$$\begin{aligned} x &= \frac{(1+\sqrt{5})r}{\sqrt{5}} \cos \varphi - r \cos \frac{(1+\sqrt{5})\varphi}{\sqrt{5}} \\ y &= \frac{(1+\sqrt{5})r}{\sqrt{5}} \sin \varphi - r \sin \frac{(1+\sqrt{5})\varphi}{\sqrt{5}} \\ \varphi &\in \langle 0; 13.8636\pi \rangle \end{aligned}$$