

# Epicykloida – predĺžená

$c > r > 0, R > 0$

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

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

$$x = \frac{(1+\sqrt{5})r}{\sqrt{5}} \cos \sqrt{5}t - 4r \cos (1+\sqrt{5})t$$

$$y = \frac{(1+\sqrt{5})r}{\sqrt{5}} \sin \sqrt{5}t - 4r \sin (1+\sqrt{5})t$$

$$t \in \langle 0; 6.2\pi \rangle$$

$$R = \frac{r}{\sqrt{5}}, \quad c = 4r$$

$$x = \frac{(1+\sqrt{5})r}{\sqrt{5}} \cos \varphi - 4r \cos \frac{(1+\sqrt{5})\varphi}{\sqrt{5}}$$

$$y = \frac{(1+\sqrt{5})r}{\sqrt{5}} \sin \varphi - 4r \sin \frac{(1+\sqrt{5})\varphi}{\sqrt{5}}$$

$$\varphi \in \langle 0; 13.8636\pi \rangle$$