

# Epicykloida – predĺžená

$c > r > 0, R > 0$

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

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

$$\begin{aligned}x &= (1+e)r \cos \frac{t}{e} - 4r \cos \frac{(1+e)t}{e} \\y &= (1+e)r \sin \frac{t}{e} - 4r \sin \frac{(1+e)t}{e} \\t &\in \langle 0; 16.8533\pi \rangle\end{aligned}$$

$$\begin{aligned}x &= (1+e)r \cos \varphi - 4r \cos (1+e)\varphi \\y &= (1+e)r \sin \varphi - 4r \sin (1+e)\varphi \\\varphi &\in \langle 0; 6.2\pi \rangle\end{aligned}$$

$$R = e r, \quad c = 4r$$