

# Hypocykloida – obyčejná hypocykloida $c=r$ , $R>0$ , $r>0$

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

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

$$\begin{aligned}x &= (\pi-1)r \cos \frac{t}{\pi} + r \cos \frac{(\pi-1)t}{\pi} \\y &= (\pi-1)r \sin \frac{t}{\pi} - r \sin \frac{(\pi-1)t}{\pi} \\t &\in \langle 0; 19.4779\pi \rangle\end{aligned}$$

$$R = \pi r, c = r$$

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