

Hypocykloida – predĺžená hypocykloida $c > r > 0, R > 0$

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

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

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

$$R = er, c = 4r$$

$$x = (e-1)r \cos \varphi + 4r \cos (e-1)\varphi$$
$$y = (e-1)r \sin \varphi - 4r \sin (e-1)\varphi$$
$$\varphi \in \langle 0; 6.2\pi \rangle$$