

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

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

$$\begin{aligned} x &= \frac{(1-\pi)r}{\pi} \cos \pi t + \frac{r}{2} \cos (\pi-1)t \\ y &= \frac{(1-\pi)r}{\pi} \sin \pi t + \frac{r}{2} \sin (\pi-1)t \\ t &\in \langle 0; 6.2\pi \rangle \end{aligned}$$

$$R = \frac{r}{\pi}, c = \frac{r}{2}$$

$$\begin{aligned} x &= \frac{(1-\pi)r}{\pi} \cos \varphi + \frac{r}{2} \cos \frac{(\pi-1)\varphi}{\pi} \\ y &= \frac{(1-\pi)r}{\pi} \sin \varphi + \frac{r}{2} \sin \frac{(\pi-1)\varphi}{\pi} \\ \varphi &\in \langle 0; 19.4779\pi \rangle \end{aligned}$$