

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

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

$$x = \frac{(1-\sqrt{11})r}{\sqrt{11}} \cos \sqrt{11}t + \frac{3r}{4} \cos(\sqrt{11}-1)t$$

$$y = \frac{(1-\sqrt{11})r}{\sqrt{11}} \sin \sqrt{11}t + \frac{3r}{4} \sin(\sqrt{11}-1)t$$

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

$$R = \frac{r}{\sqrt{11}}, c = \frac{3r}{4}$$

$$x = \frac{(1-\sqrt{11})r}{\sqrt{11}} \cos \varphi + \frac{3r}{4} \cos \frac{(\sqrt{11}-1)\varphi}{\sqrt{11}}$$

$$y = \frac{(1-\sqrt{11})r}{\sqrt{11}} \sin \varphi + \frac{3r}{4} \sin \frac{(\sqrt{11}-1)\varphi}{\sqrt{11}}$$

$$\varphi \in \langle 0; 20.5631\pi \rangle$$