

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

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

$$x = -\frac{r}{9} \cos \frac{9t}{8} + \frac{r}{4} \cos \frac{t}{8}, y = -\frac{r}{9} \sin \frac{9t}{8} + \frac{r}{4} \sin \frac{t}{8}$$

$$t \in \langle 0; 16\pi \rangle$$

$$x = -\frac{r}{9} \cos \varphi + \frac{r}{4} \cos \frac{\varphi}{9}, y = -\frac{r}{9} \sin \varphi + \frac{r}{4} \sin \frac{\varphi}{9}$$

$$\varphi \in \langle 0; 18\pi \rangle$$

$$R = \frac{8r}{9}, c = \frac{r}{4}$$