

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

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

$$x = \frac{5r}{4} \cos \frac{4t}{9}, y = \frac{5r}{4} \sin \frac{4t}{9}$$

$t \in (0; 18\pi)$

$$x = \frac{5r}{4} \cos \varphi, y = \frac{5r}{4} \sin \varphi$$

$\varphi \in (0; 8\pi)$

$$R = \frac{9r}{4}, c = 0$$