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

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

$x = \frac{r}{8}\cos\frac{8t}{9} + 5r\cos\frac{t}{9}, \ y = \frac{r}{8}\sin\frac{8t}{9} - 5r\sin\frac{t}{9}$
$t \in \langle 0 \, ; \, 18\pi \rangle$

$x = \frac{r}{8}\cos\varphi + 5r\cos\frac{\varphi}{8}, \ y = \frac{r}{8}\sin\varphi - 5r\sin\frac{\varphi}{8}$
$\varphi \in \langle 0 \, ; \, 16\pi \rangle$

$$R = \frac{9r}{8}, \ c = 5r$$