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

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

$x = -\frac{r}{4}\cos\frac{4t}{3} + 4r\cos\frac{t}{3}$, $y = -\frac{r}{4}\sin\frac{4t}{3} + 4r\sin\frac{t}{3}$
$t \in \langle 0\,;\, 6\pi \rangle$

$x = -\frac{r}{4}\cos\varphi + 4r\cos\frac{\varphi}{4}$, $y = -\frac{r}{4}\sin\varphi + 4r\sin\frac{\varphi}{4}$
$\varphi \in \langle 0\,;\, 8\pi \rangle$

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