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

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

$x = -\frac{r}{3}\cos\frac{3t}{2} + r\cos\frac{t}{2}$, $y = -\frac{r}{3}\sin\frac{3t}{2} + r\sin\frac{t}{2}$
$t \in \langle 0 \,;\, 4\pi \rangle$

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

$$R = \frac{2r}{3}, \, c = r$$