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

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

$x = \frac{2r}{3}\cos\frac{3t}{5} + \frac{r}{2}\cos\frac{2t}{5}$, $y = \frac{2r}{3}\sin\frac{3t}{5} - \frac{r}{2}\sin\frac{2t}{5}$
$t \in \langle 0\,;\,10\pi \rangle$

$x = \frac{2r}{3}\cos\varphi + \frac{r}{2}\cos\frac{2\varphi}{3}$, $y = \frac{2r}{3}\sin\varphi - \frac{r}{2}\sin\frac{2\varphi}{3}$
$\varphi \in \langle 0\,;\,6\pi \rangle$

$$R = \frac{5r}{3},\ c = \frac{r}{2}$$