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

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

$x = \frac{8r}{5}\cos\frac{5t}{3} - 2r\cos\frac{8t}{3},\ y = \frac{8r}{5}\sin\frac{5t}{3} - 2r\sin\frac{8t}{3}$
$t \in \langle 0\,;\ 6\pi \rangle$

$x = \frac{8r}{5}\cos\varphi - 2r\cos\frac{8\varphi}{5},\ y = \frac{8r}{5}\sin\varphi - 2r\sin\frac{8\varphi}{5}$
$\varphi \in \langle 0\,;\ 10\pi \rangle$

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