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

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

$x = (1+\pi)r\cos\frac{t}{\pi} - r\cos\frac{(1+\pi)t}{\pi}$
$y = (1+\pi)r\sin\frac{t}{\pi} - r\sin\frac{(1+\pi)t}{\pi}$
$t \in \langle 0\,;\, 19.4779\pi \rangle$

$\boxed{R = \pi r,\ c = r}$

$x = (1+\pi)r\cos\varphi - r\cos(1+\pi)\varphi$
$y = (1+\pi)r\sin\varphi - r\sin(1+\pi)\varphi$
$\varphi \in \langle 0\,;\, 6.2\pi \rangle$