

Problem 5: Write parametric equations to describe the curve traced by the following motion: A particle with center $(0, 0)$ and radius 2, starting at $(2, 0)$, at time $t = 0$, moving counterclockwise with a constant speed of 1 radian/sec. (Source: AoPS Calculus)

The parametric equations are

$$\begin{aligned}x(t) &= 2 \cos t \\y(t) &= 2 \sin t\end{aligned}$$

Thus the parameterization is $\boxed{(x, y) = (2 \cos t, 2 \sin t)}$.