



$$\xrightarrow{\alpha}$$
$$\begin{pmatrix} r \\ \theta \end{pmatrix} \mapsto \begin{pmatrix} r \cos(\theta) \\ r \sin(\theta) \end{pmatrix}$$

A diagram showing a circular region Y in the (x, y) plane. The region Y is a purple circle. The label $Y = \alpha(u)$ is centered within the circle.