

Graph each pair of parametric equations

$$\begin{cases} x = 6 \sin t, \\ y = 6 \cos t, \quad 0 \leq t \leq 2\pi. \end{cases}$$

**Solution:**

Because

$$\begin{aligned} x^2 + y^2 &= (6 \sin t)^2 + (6 \cos t)^2 = 6^2 \sin^2 t + 6^2 \cos^2 t = \\ &= 6^2(\sin^2 t + \cos^2 t) = 6^2 \cdot 1 = 6^2 \end{aligned}$$

then we get a circle with radius  $R = 6$  with center at the origin. Thus we have

