

(a) $x = 4 \cos \theta$, $y = 5 \sin \theta$, $-\pi/2 \leq \theta \leq \pi/2$.

$(\frac{x}{4})^2 + (\frac{y}{5})^2 = \cos^2 \theta + \sin^2 \theta = 1$, which is an ellipse with x -intercepts $(\pm 4, 0)$ and y -intercepts $(0, \pm 5)$. We obtain the portion of the ellipse $\frac{x^2}{16} + \frac{y^2}{25} = 1$ with $x \geq 0$ since $4 \cos \theta \geq 0$ for $-\pi/2 \leq \theta \leq \pi/2$.

(b)

