1. Let $C$ be the curve given by the parametric equations $x(t) = 8\sin(t)$, $y(t) = 1 + 8\cos(t)$ for $0 \leq t \leq \pi$. Find the length of the curve $C$.

2. Plot and label these points, which are given in polar coordinates $(r, \theta)$:

   - $A : (6, 0)$
   - $B : (3, \pi)$
   - $C : (4, \pi/4)$
   - $D : (-3, \pi/4)$

3. The plot below shows the curve given in polar coordinates by $r = \sqrt{\cos(\theta)}$ for $-\pi/2 \leq \theta \leq \pi/2$. Find the area inside the curve.