

Q1) Sketch the curve with  $r = \cos \frac{\theta}{2}$ ,  $0 \leq \theta \leq \pi$  by first sketching the graph of  $r$  as a function of  $\theta$  in Cartesian coordinates.

Q2) Find the exact length of the polar curve:  $r = 7^\theta$ ,  $0 \leq \theta \leq 2\pi$ .