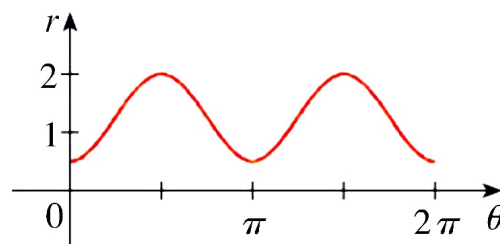


- (P667#37) 1. Sketch the curve with the given polar equation by first sketching the graph of  $r$  as a function of  $\theta$  in Cartesian coordinates.  $r = 2 \cos 4\theta$ .

- (P667#47) 2. The figure shows a graph of  $r$  as a function of  $\theta$  in Cartesian coordinates. Use it to sketch the corresponding polar curve.



- (P673#17) 3. Write an integral for area of the region enclosed by **one loop** of the curve:  $r = 4 \cos 3\theta$ .

(P673#21) 4. Write an integral for the region enclosed by **the INNER loop** of the curve:  $r = 1 + 2 \sin \theta$ .

(P673#47) 5. Write an integral for the length of the polar curve  $r = \theta^2$  for  $0 \leq \theta \leq 2\pi$ .

(P673#48) 6. Write an integral for the length of the polar curve  $r = 2(1 + \cos \theta)$ .