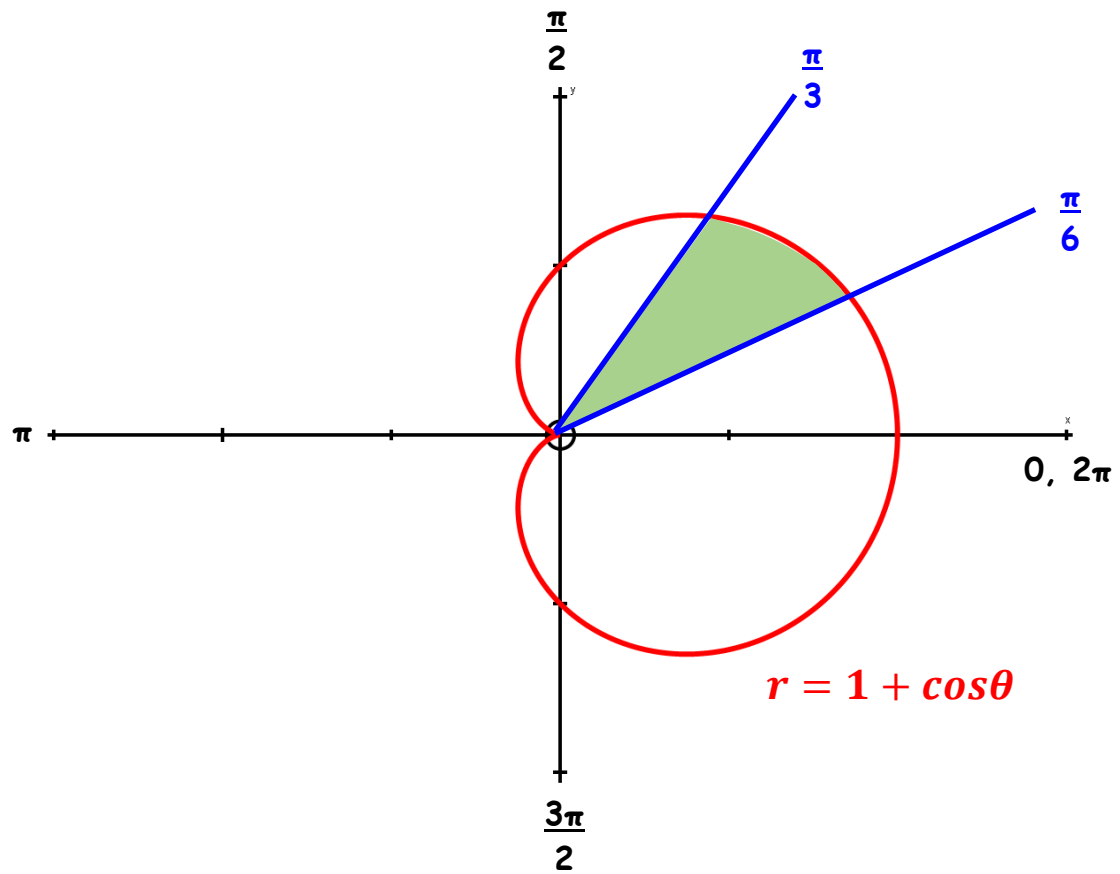
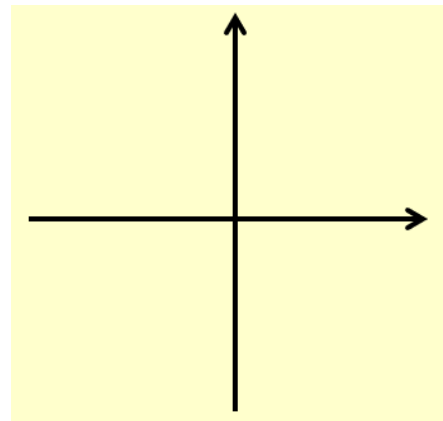


5C Integrating Polar Curves



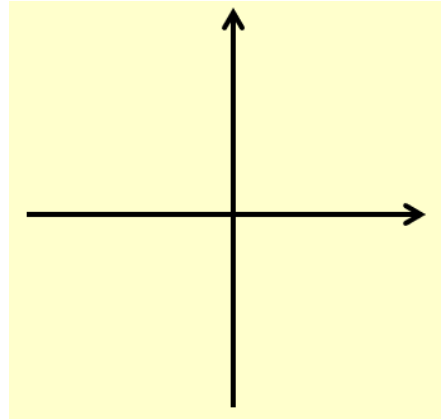
1. Find the area enclosed by the cardioid with equation:

$$r = a(1 + \cos\theta)$$



2. Find the area of one loop of the curve with polar equation:

$$r = a \sin 4\theta$$

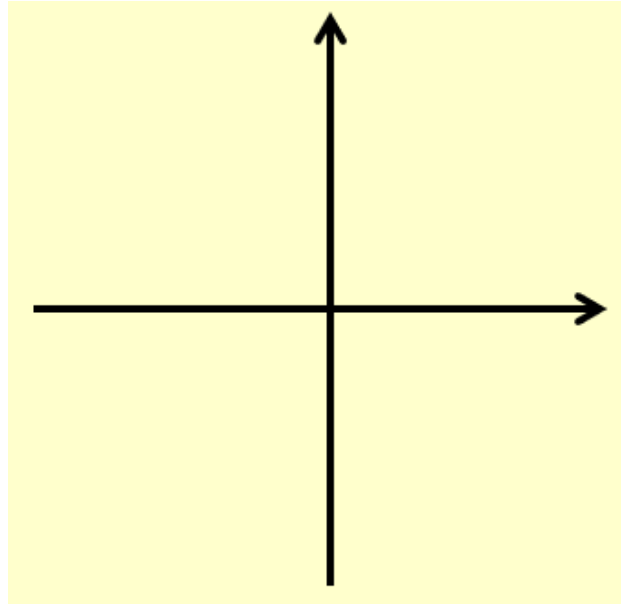


3.

a) On the same diagram, sketch the curves with equations:

$$r = 2 + \cos\theta$$

$$r = 5\cos\theta$$



b) Find the polar coordinates of the intersection of these curves

c) Find the exact value of the finite region bounded by the 2 curves

