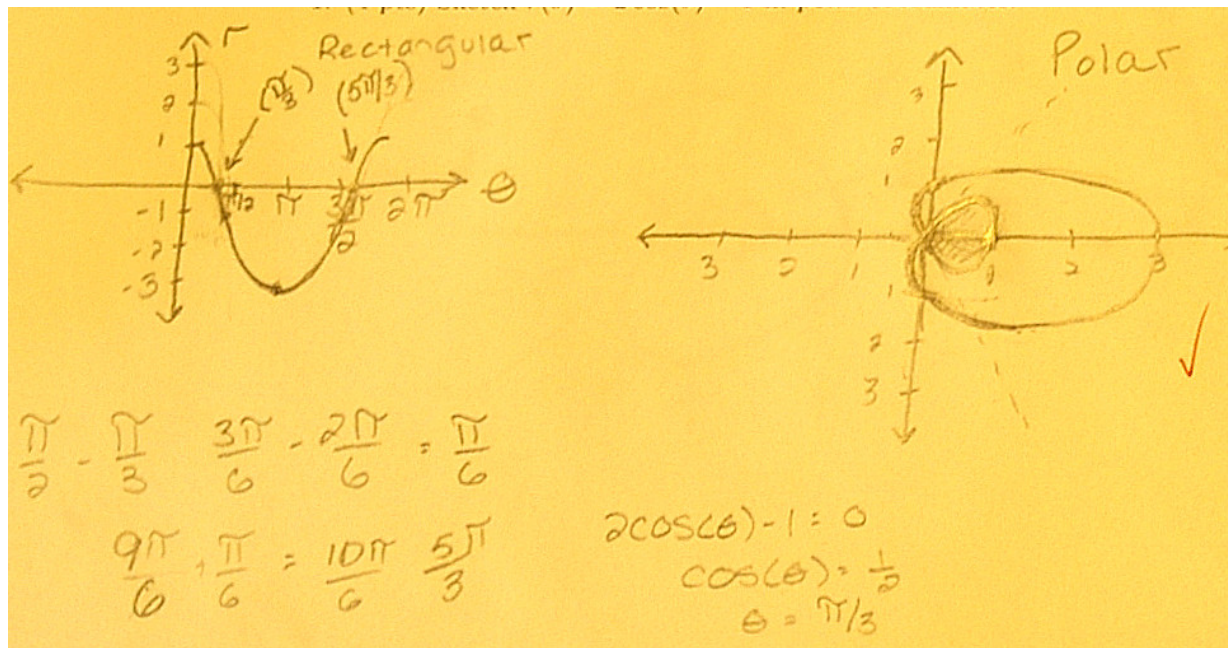




1. (4 pts) Sketch  $r(\theta) = 2 \cos(\theta) - 1$  in polar coordinates.



Thanks to Casey Hensel

2. (3 pts) Give a definite integral, but do not compute it, which gives the area enclosed by the inner loop.

$$\frac{1}{2} \int_{-\pi/3}^{\pi/3} (2\cos\theta - 1)^2 d\theta$$

Thanks to Aaron Durkee

3. (3 pts) Give a definite integral, but do not compute it, which gives total enclosed area, (no region counted twice.)

$$A = \frac{1}{2} \int_{\pi/3}^{5\pi/3} (2\cos\theta - 1)^2 d\theta$$

Thanks to Ryan Basset