

Math 122 - #30
Polar Area

Find the area of the region:

1. Inside $r = 2 \sin \theta$ and outside $r = 1$

2. Inside both $r = 4 \cos \theta$ and $r = 2$

3. Inside both $r = \cos \theta$ and $r = \sqrt{3} \sin \theta$

4. Inside $r = 2 + \cos \theta$ and outside $r = 2$

5. Inside $r = 3 + 2 \cos \theta$ and outside $r = 4$

Answers

1. $\frac{\pi}{3} + \frac{\sqrt{3}}{2}$
2. $\frac{8\pi}{3} - 2\sqrt{3}$
3. $\frac{5\pi}{24} - \frac{\sqrt{3}}{4}$
4. $4 + \frac{\pi}{4}$
5. $\frac{13\sqrt{3}}{2} - \frac{5\pi}{3}$