

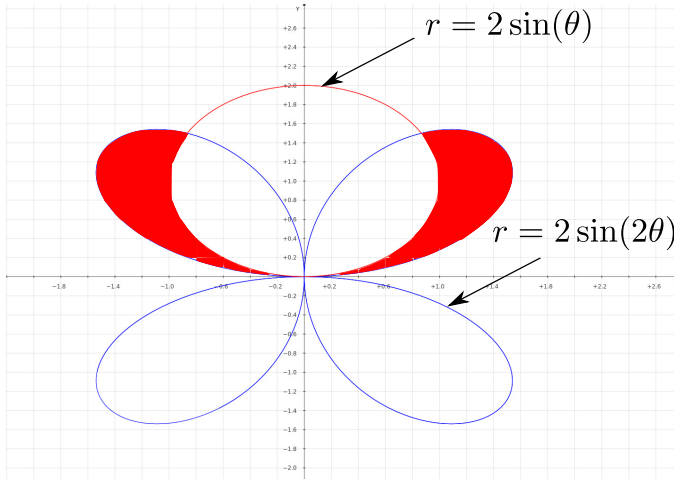
LAST NAME:

FIRST NAME:

MATH 65B - Spring 2018

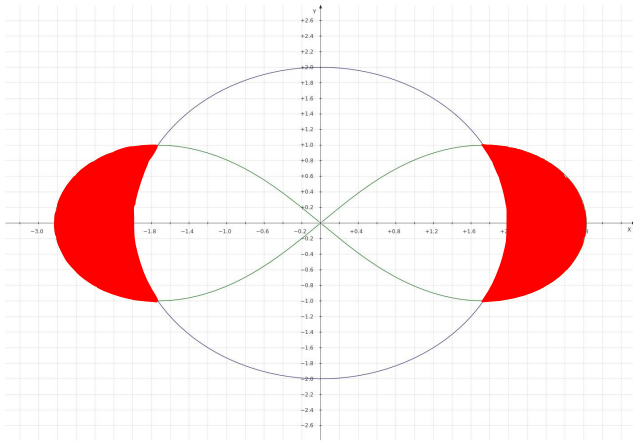
Groupwork 9: April 5, 2018

1. Find the area of the region that lies outside the circle $r = 2 \sin(\theta)$, and inside the polar rose $r = 2 \sin(2\theta)$. The region is given by the shaded region in the labeled plot below.



Please, show all work.

2. Find the area inside the lemniscate $r^2 = 8 \cos(2\theta)$, and outside the circle $r = 2$.



Please, show all work.

3. Find the length of the given curve.

$$r = \cos^4\left(\frac{\theta}{4}\right), \quad 0 < \theta < 2\pi$$

Please, show all work.