Math 121, Section(s) 01, Spring 2023

Homework #20

Due **TUESDAY, May 9th** in Gradescope by 11:59 pm ET

Goal: Computing Area bounded by Polar curves.

For **all** problems below, **sketch** the Polar curve(s) and **shade** the described bounded region.

1. Find the Area enclosed by $r = 1 - \sin\theta$.

2. Set-Up but **DO NOT EVALUATE** another slightly different Integral representing the same area of the described bounded region in #1.

3. Find the Area inside $r = 4\sin\theta$ and outside $r = 2$

4. Set-Up but **DO NOT EVALUATE** another slightly different Integral representing the same area of the described bounded region in #3.

5. Find the Area inside $r = 3\cos\theta$ and outside $r = 1 + \cos\theta$

6. Set-Up but **DO NOT EVALUATE** another slightly different Integral representing the same area of the described bounded region in #5.

7. Find the Area of the region that lies inside both curves $r = 1 + \cos\theta$ and $r = 1 - \cos\theta$.

8. Set-Up but **DO NOT EVALUATE** another slightly different Integral representing the same area of the described bounded region in #7.

9. Find the Area of the region that lies inside both curves $r = 3 + 2\cos\theta$ and $r = 3 + 2\sin\theta$. Use the Cartesian coordinate plot to help sketch the Polar curves.

10. Set-Up but **DO NOT EVALUATE** another slightly different Integral representing the same area of the described bounded region in #9.

Last One!!!

We made it!!

Thank you so much for working hard.

I really appreciate it!

REGULAR OFFICE HOURS

Monday: None this week

6:00–7:30 pm TA Admire, SMUDD 204

Tuesday: None this week

6–7:30 pm TA Admire, SMUDD 204

Wednesday: None this week

7:30–9:00 pm TA Aidee, SMUDD 204

Thursday: TBA

6:00–7:30 pm TA Ali, SMUDD 204

7:30–9:00 pm TA Aidee, SMUDD 204

Friday: 12:00–2:00 pm

6:00–7:30 pm TA Ali, SMUDD 204

Organize your study schedule for the Final Exam.