Review Packet for Final Exam Fall 2022

Material since Exam #3

Math 121-D. Benedetto

Polar Coordinates: For each problem, sketch the polar curve(s) and answer the related question(s).

1. Find the area bounded by $r = 2\sin\theta$.

2. Find the area bounded by one petal/loop of the 4-leaved rose $r = 3\sin(2\theta)$.

3. Find the area bounded by $r = \theta$ with $0 \leq \theta \leq 2\pi$.

4. Find the area bounded by the cardioid $r = 2 + 2\sin\theta$.

5. Find the area bounded inside $r = 2 + 2\cos\theta$ and outside $r = 3$.

6. Find the area bounded inside $r = 2\sin\theta$ and outside $r = \sqrt{2}$.

7. Find the area bounded inside $r = 3 + 3\sin\theta$ and outside $r = \frac{9}{2}$.

8. Find the area bounded outside the polar curve $r = 2 + 2\cos\theta$ and inside the polar curve $r = 6\cos\theta$.