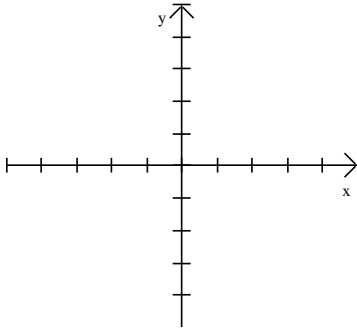


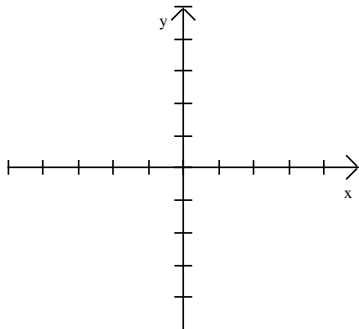
10.5 Polar Area Day 2 Worksheet

For each of the following, sketch a graph, shade the region, and find the area.

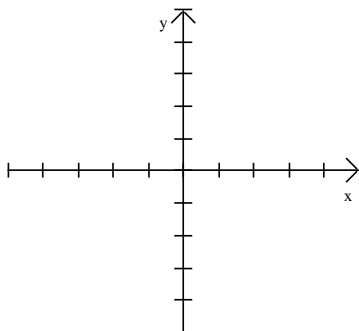
1. inner loop of $r = 1 + 2 \cos \theta$



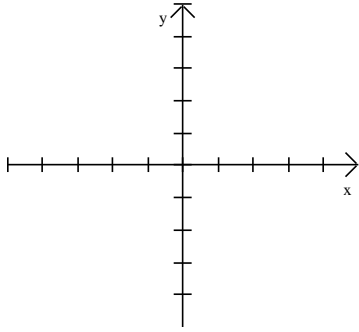
2. between the loops of $r = 1 + 2 \cos \theta$



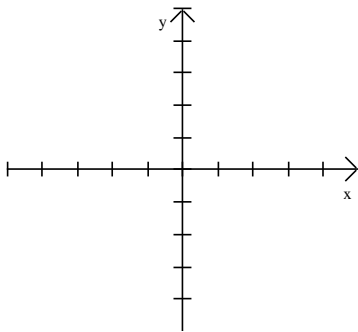
3. the graph created by $r = 2 - 4 \sin \theta$



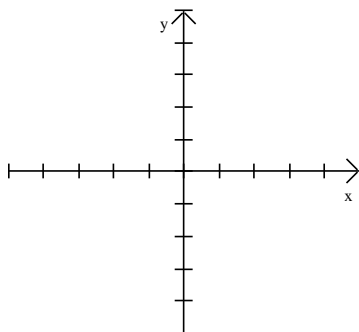
4. inside $r = 3 \cos \theta$ and outside $r = 2 - \cos \theta$



5. common interior of $r = 4 \sin \theta$ and $r = 2$



6. inside $r = 3 \sin \theta$ and outside $r = 1 + \sin \theta$



- | | | | | | |
|--------------------------------|----------------------|-----------------------|----------------|---------------------------------|----------|
| 1. $\pi - \frac{3\sqrt{3}}{2}$ | 2. $\pi + 3\sqrt{3}$ | 3. $8\pi + 6\sqrt{3}$ | 4. $3\sqrt{3}$ | 5. $\frac{8\pi}{3} - 2\sqrt{3}$ | 6. π |
|--------------------------------|----------------------|-----------------------|----------------|---------------------------------|----------|