1. Find the area of the region outside the circle $r=\frac{1}{2}$ and inside the circle $r=\cos (\theta)$.
(Find intersection points and sketch the curves first.)

2. Find the area of the region inside the curve $r=\sqrt{\cos (\theta)}$ and outside the circle $r=\frac{1}{\sqrt{2}}$.
(Find intersection points and sketch the curves first. Note: $\frac{1}{\sqrt{2}} \approx 0.7$ )

3. Find the area inside one leaf of the rose $r=\cos (3 \theta)$.
(Sketch the curve first.)

4. Find the area that outside the circle $r=1$ and inside the circle $r=2 \sin (\theta)$.
(Find the intersection points and sketch the curves first.)

