

Homework Sec 10.4

Name : _____

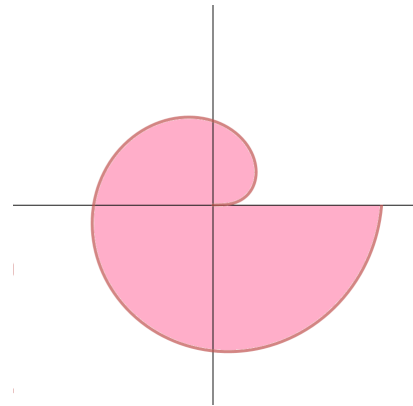
(Please use your own paper. Show all work. Leave plenty of space between each answer. Check your answers against my answer key on the course website).

1. Find the area of the region that is bounded by the polar curve

$$r = \tan \theta \text{ and lies on the interval } \frac{\pi}{6} \leq \theta \leq \frac{\pi}{3}.$$

2. Find the area of the shaded region enclosed by the polar curve

$$r = \sqrt{\theta}.$$



3. Find the area of the region enclosed by one loop of the polar curve

$$r = \cos 3\theta.$$

4. Find the area of the region enclosed by one loop of the polar curve

$$r = \sin 4\theta.$$

5. Find the area of the region inside the larger loop and outside the smaller loop of the polar curve $r = 1 + 2 \cos \theta$.

6. Find the area of the region that lies inside both $r = 4 \sin 2\theta$ and

$$r = 4 \cos 2\theta.$$

7. Find all points of intersection of the curves $r = \sin \theta$ and $r = \sin 2\theta$.