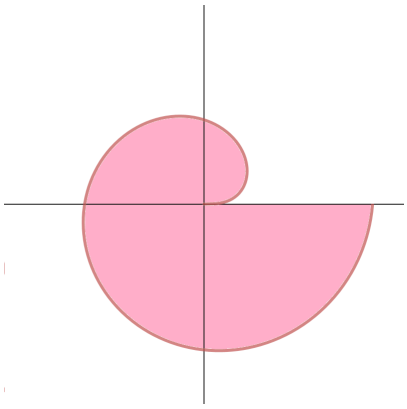
Homework Sec 10.4

Name : _____

(Please use your own paper. Show all work. Leave plenty of space between each answer. Check your answers against my answer key egunawan.github.io/fall17/notes/HW10_4key.pdf).

1. Find the area of the region that is bounded by the polar curve $r = \tan\theta$ and lies on the interval $\frac{\pi}{6} \le \theta \le \frac{\pi}{3}$.

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 $r = \sin 2\theta$.