

HOMEWORK ON POLARS DAY 2

NAME key

Identify the polar graph (circle, cardioid, limaçon, lemniscate, or rose):

If a circle, name the center (in polar coordinates) and the radius.

If a limaçon, name the type.

If a rose, state the number of petals.

If a lemniscate, identify the length of each petal.

1. $r = 4 \cos \theta$ circle - center $(2, 0)$
 $r = 2$

6. $r = 6 + 6 \cos \theta$ cardioid

2. $r = 5 - 2 \sin \theta$ convex
limaçon

7. $r = 8 \cos 5\theta$ rose - 5 petals

3. $r = -7 \sin 10\theta$ rose - 20 petals

8. $r = -8$ circle - center $(0, 0)$
 $r = 8$

4. $r = 4 + 7 \sin \theta$ limaçon w/
inner loop

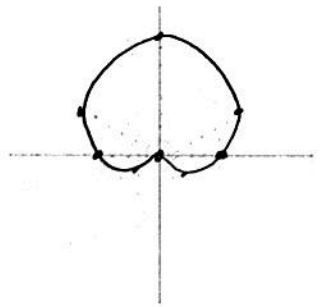
9. $r = 8 + 6 \cos \theta$ dimpled limaçon

5. $r = -2 \sin \theta$ circle - center $(-1, \frac{\pi}{2})$
 $r = 1$

10. $r^2 = 9 \cos 2\theta$ lemniscate
 $a = 3$

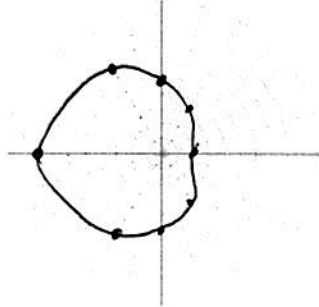
Graph:

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



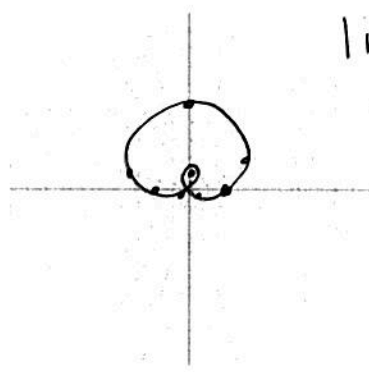
cardioid

12. $r = 5 - 3 \cos \theta$



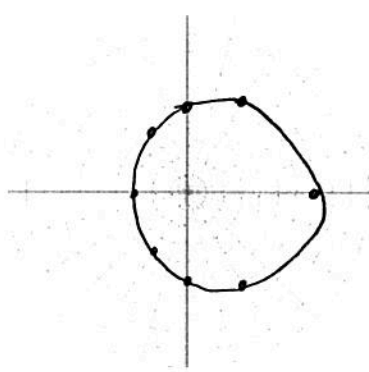
dimpled
limaçon

13. $r = 2 + 3 \sin \theta$



limaçon
w/ inner
loop

14. $r = 5 + 2 \cos \theta$



convex
limaçon