For each graph below, name the shape and the axis it is symmetric (positive x-axis, negative y-axis, etc).

$r = 5 + 2\sin\theta$ _____ _____

$r = 2 + 3\cos\theta$ _____ _____

$r = 2 - 2\cos\theta$ _____ _____

For each rose curve, tell the number of petals and length of each petal.

$r = 3\sin 4\theta$ _____ _____

$r = 4\sin 5\theta$ _____ _____

Polar Graphs: Cardioid, Limacon with an Inner Loop, Dimpled Limacon, Rose, Circle, Ellipse

1. $r = 2\cos(5\theta)$

This graph is a _____

It has ___ petals that are ____ units long

2. $r = 3 - 2\cos\theta$

This graph is a _____

symmetric about the _____

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

This graph is a _____

symmetric about the _____

4. $r = 2 - 3\sin\theta$

This graph is a _____

symmetric about the _____

5. $r = 3\cos(2\theta)$

This graph is a _____

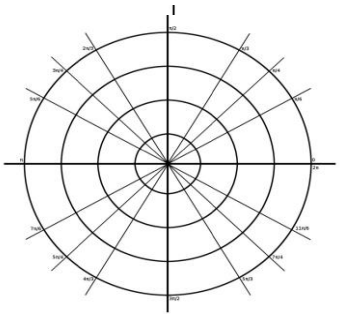
It has ___ petals that are ____ units long

6. $r = 3$

This graph is a _____

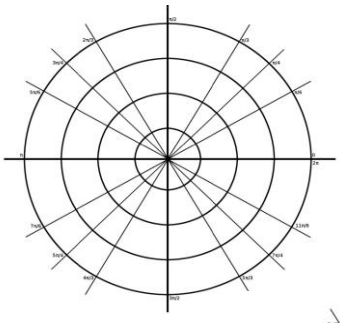
7. $r = -3\sin\theta$

This graph is a _____



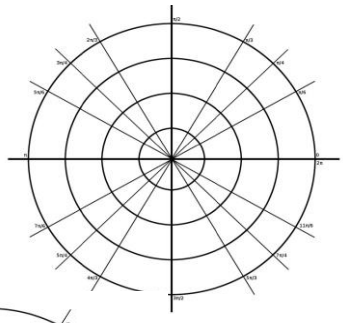
8. $\theta = \frac{11\pi}{6}$

This graph is a _____



9. $r = 1 - 2\cos\theta$

This graph is a _____



10. $r = 3 - 3\sin\theta$

This graph is a _____