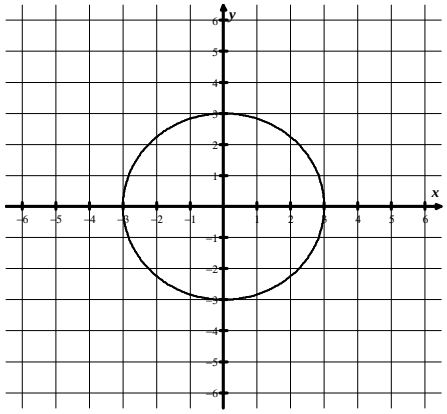
EMCF 19

Due 3/1 at 8:00 am

Log into CourseWare at http://www.casa.uh.edu
and access the answer sheet by clicking on the EMCF tab.

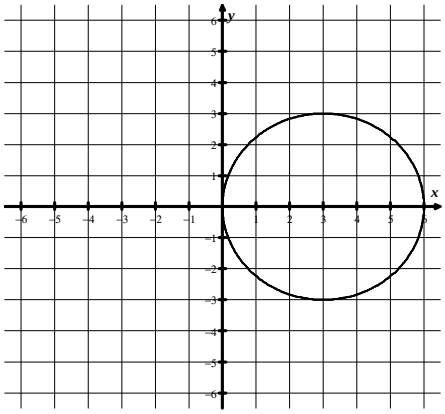
NOTE: On all problems, choice F is "None of the above".

1.



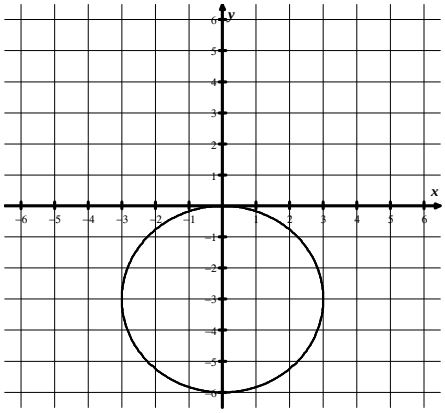
A. $r = -6\sin\theta$
B. $r = 6\cos\theta$
C. $r = 3 + 3\cos\theta$
D. $r = 3$
E. $r = 3 + 3\sin\theta$

2.



A. $r = -6\sin\theta$
B. $r = 6\cos\theta$
C. $r = 3 + 3\cos\theta$
D. $r = 3$
E. $r = 3 + 3\sin\theta$

3.



A. $r = -6\sin\theta$
B. $r = 6\cos\theta$
C. $r = 3 + 3\cos\theta$
D. $r = 3$
E. $r = 3 - 3\sin\theta$

For numbers 4 – 7.

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

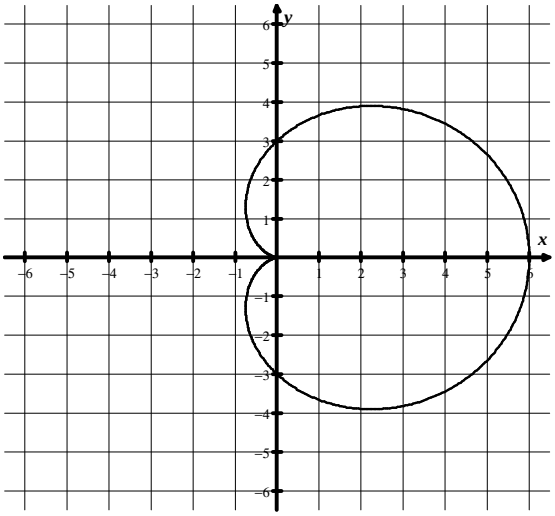
B. $r = 2 - 3\cos\theta$

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

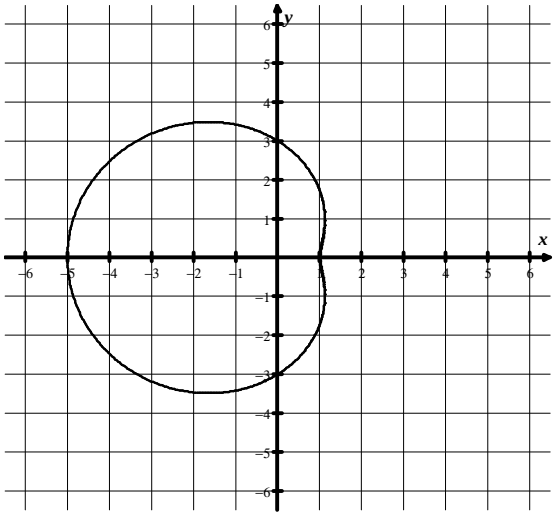
D. $r = -3 + 3\cos\theta$

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

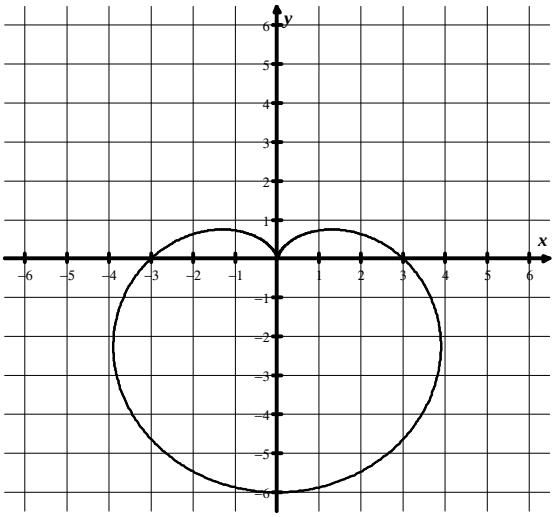
4.



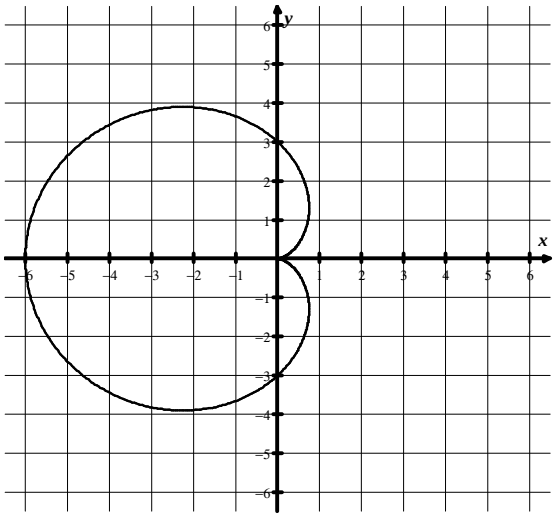
5.



6.



7.



8. The area enclosed by the curve $r = 4\sin\theta$, $0 \le \theta \le \pi$ is:

A. 2π

B. 4π

C. 16π

D. 8π

9. The area enclosed by $r = 2 - 2\cos\theta$ is:

A. 6π

B. 8π

C. $9\pi/2$

D. $9\pi/4$

10. The definite integral which gives the area enclosed by the inner loop of $r = 1 + 2\sin\theta$ is:
Hint: Find where r = 0 and look at the graph.

A. $\int_{\frac{7\pi}{6}}^{\frac{3\pi}{2}} \frac{1}{2}(1+2\sin\theta)^2 \, d\theta$

B. $\int_{\frac{7\pi}{6}}^{\frac{3\pi}{2}} (1+2\sin\theta)^2 \, d\theta$

C. $\int_{\frac{5\pi}{6}}^{\frac{3\pi}{2}} (1+2\sin\theta)^2 \, d\theta$

D. $\int_{\frac{5\pi}{6}}^{\frac{7\pi}{6}} \frac{1}{2}(1+2\sin\theta)^2 \, d\theta$

11. The area of one petal of $r = \cos 2\theta$ can be given by $\int_{\frac{\pi}{4}}^{\frac{3\pi}{4}} 0.5\cos 2\theta \, d\theta$

A. True B. False

12. The area of one petal of $r = \sin 6\theta$ can be given by $\int_{0}^{\frac{\pi}{3}} 0.5(\sin 6\theta)^2 \, d\theta$

A. True B. False

13. The area in all of the petals of r= $sin6\theta$ can be given by $\int_0^{\frac{\pi}{3}} 3(sin6\theta)^2 \, d\theta$

A. True B. False