

I. For the set of parametric equations  $x = t^3$   
 $y = \frac{t^2}{2}$  for  $-2 \leq t \leq 3$

- Sketch the graph
- Indicate the orientation
- Eliminate the parameter
- Write a set of parametric equations that has the same graph, but with the orientation reversed

II. Same instructions, but with  $x = -3\sin(t)$   
 $y = 5\cos(t)$  for  $0 \leq t \leq 2\pi$

- Sketch the graph
- Indicate the orientation
- Eliminate the parameter
- Write a set of parametric equations that has the same graph, but with the orientation reversed

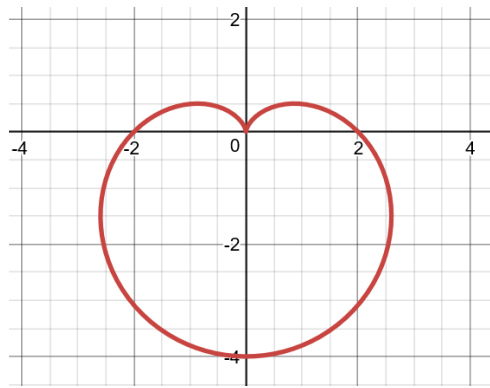
III. For the set of parametric equations in Section I above, find:

- The equation of the line tangent to the graph when  $t = 2$
- The concavity (up or down) when  $t = -1$

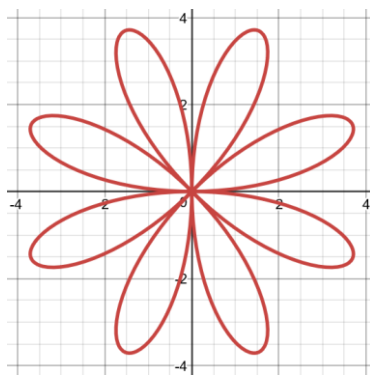
IIII. Set up an integral which will find the indicated area (pictures below):

- The entire interior of  $r = 2 - 2\sin(\theta)$
- Inside one petal of  $r = 4\sin(4\theta)$
- Inside  $r = 2$  and outside  $r = 2\cos(2\theta)$

A.



B.



C.

