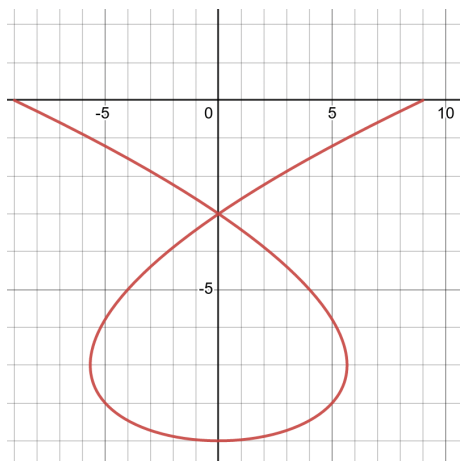


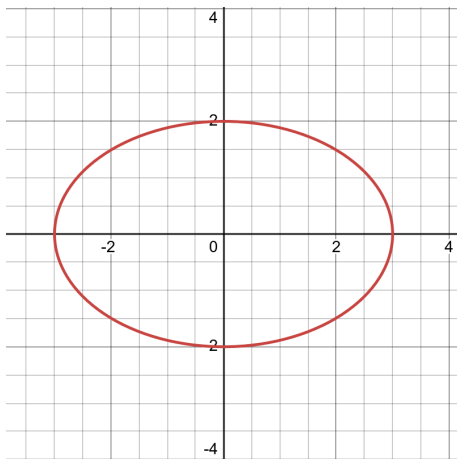
For the curve defined by the parametric equations

$$x = t^3 - 6t, y = t^2 - 9$$



1. Find and label 4 points on the graph.
2. Find $\frac{dy}{dx}$
3. Find the slope of the tangent line at $(4, -5)$ hint: make sure to find t first.
4. Find the arc length of the curve for $0 < t < 3$ Use wolfram to compute the integral.

5. Find the area enclosed by the ellipse $x = 2 \cos(t)$, $y = 3 \sin(t)$.



Compute the integral by hand.