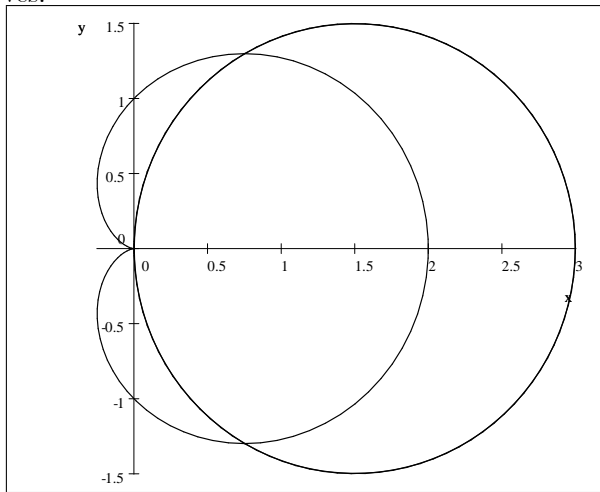


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Q.1: Graphs of $r = 1 + \cos(\theta)$ and $r = 3 \cos(\theta)$ are shown in the figure. Find the area that lies inside both curves.



Q.2: Find equation of the sphere with center $(-4, 3, -2)$ and radius equal to 5. Write name and equations of its intersections with coordinate planes.