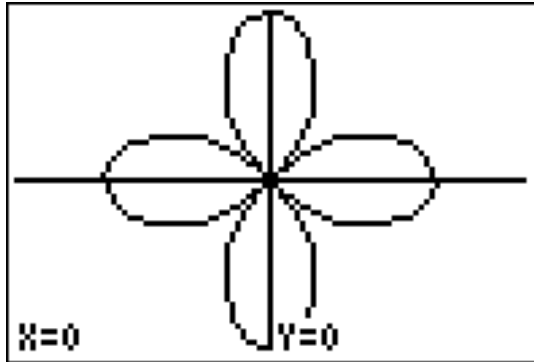
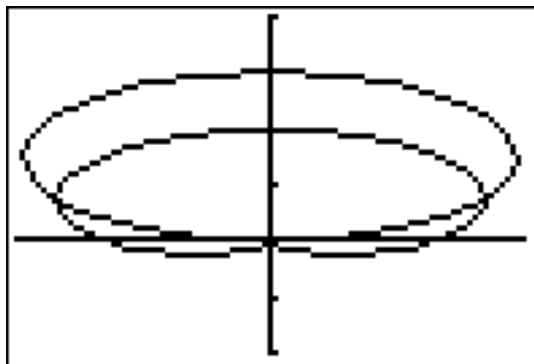


Sketch the area given by the following integrals.

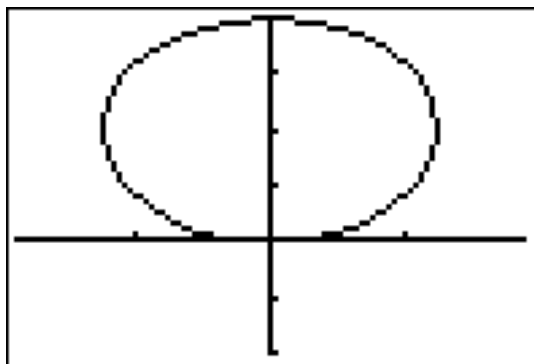
1. $\int_0^{\pi/4} \cos^2 2\theta \, d\theta$



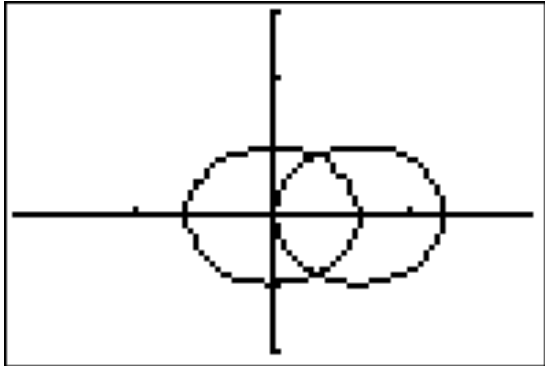
2. $\frac{1}{2} \int_{\pi/6}^{\pi/2} (3\sin\theta)^2 \, d\theta - \frac{1}{2} \int_{\pi/6}^{\pi/2} (1 + \sin\theta)^2 \, d\theta$



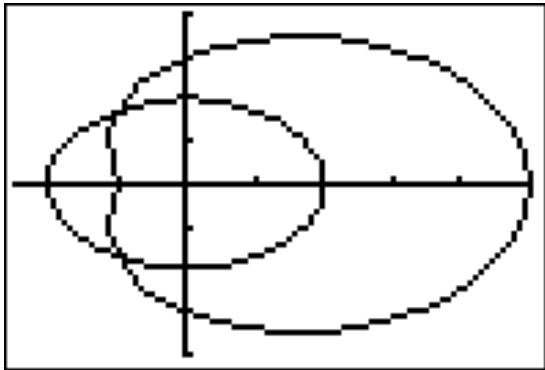
3. $\frac{1}{2} \int_0^{\pi/2} (4\sin\theta)^2 \, d\theta$



$$4. \frac{1}{2} \int_{-\pi/3}^{\pi/3} (2 \cos \theta)^2 d\theta - \frac{1}{2} \int_{-\pi/3}^{\pi/3} (1)^2 d\theta$$



$$5. \frac{1}{2} \int_{-2\pi/3}^{2\pi/3} (3 + 2 \cos \theta)^2 d\theta - \frac{1}{2} \int_{-2\pi/3}^{2\pi/3} (2)^2 d\theta$$



$$6. \frac{1}{2} \int_{\pi/2}^{2\pi/3} (-6 \cos \theta)^2 d\theta + \frac{1}{2} \int_{2\pi/3}^{\pi} (2 - 2 \cos \theta)^2 d\theta$$

