

④

$$r = 6 - 6 \sin \theta$$

$$A = \frac{1}{2} \int_0^{2\pi} (6 - 6 \sin \theta)^2 d\theta$$

$$\text{or } = 2 \frac{1}{2} \int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} (6 - 6 \sin \theta)^2 d\theta$$

$$= 54\pi$$

