Solutions

Each answer shows the steps, then the **result**.

2.1

- $A = \dfrac{1}{2}\displaystyle\int_{\alpha}^{\beta} \big(f(\theta)\big)^2\, d\theta$

2.2

- $A = \dfrac{1}{2}\displaystyle\int_{0}^{2\pi} 3^2\, d\theta$

2.3

- $\dfrac{1}{2}(9)(2\pi) = 9\pi$

3.1 B

- half the integral of r^2

3.2

(a)

- $A = \dfrac{1}{2}\displaystyle\int_{0}^{2\pi} (1+\cos\theta)^2\, d\theta$

(b)

- $(1+\cos\theta)^2 = 1 + 2\cos\theta + \cos^2\theta$

3.3

- $A = \dfrac{1}{2}\displaystyle\int_{0}^{\pi/3} \big(2\sin(3\theta)\big)^2\, d\theta = \dfrac{1}{2}\displaystyle\int_{0}^{\pi/3} 4\sin^2(3\theta)\, d\theta$