

Integration

1. $\int_0^1 e^x dx$

- (1) e^x (2) 1
(3) 0 (4) $e - 1$

2. $\int_0^2 5x dx$

- (1) 5 (2) 10
(3) 1 (4) 0

3. $\int_0^{\pi/2} (\sin \theta + \cos \theta) d\theta$

- (1) 1 (2) 0
(3) 2 (4) -1

4. $\int (2x+3)^2 dx$

- (1) $\frac{4x^3}{3} + 9x - 6x^2 + C$
(2) $\frac{4x^3}{3} - 9x - 6x^2 + C$
(3) $\frac{4x^3}{3} + 9x + 6x^2 + C$
(4) $\frac{4x^3}{3} - 9x + 6x^2 + C$

5. If $y = x^2$, then $\int_0^1 y dx$ will be:

- (1) $\frac{x^3}{3} + C$ (2) $\frac{1}{3}$
(3) $\frac{2}{3}$ (4) 0

6. If $y = x^2$, then area of curve y v/s from $x = 0$ to 2 will be:

- (1) $\frac{1}{3}$ (2) $\frac{8}{3}$
(3) $\frac{4}{3}$ (4) $\frac{2}{3}$

7. Value of $\int_0^{\pi/2} \cos 3t dt$ is:

- (1) $\frac{2}{3}$ (2) $-\frac{1}{3}$
(3) $-\frac{2}{3}$ (4) $\frac{1}{3}$

8. $\int \left(\cos \frac{x}{2} - \sin \frac{x}{2} \right)^2 dx =$

- (1) $x + \cos x + c$ (2) $2 \cos^2 \frac{x}{2} + c$
(3) $\frac{1}{3} \left(\cos \frac{x}{2} - \sin \frac{x}{2} \right)^3 + c$ (4) $x - \cos x + c$

9. $\int \sqrt{1 + \sin x} dx =$

- (1) $\frac{1}{2} \left(\sin \frac{x}{2} + \cos \frac{x}{2} \right) + c$
(2) $\frac{1}{2} \left(\sin \frac{x}{2} - \cos \frac{x}{2} \right) + c$
(3) $2\sqrt{1 + \sin x} + c$
(4) $-2\sqrt{1 - \sin x} + c$