

Class 12 Maths Chapter 8 Application of Integrals MCQs For Practice

1. The area of the region bounded by the y-axis, $y = \cos x$ and $y = \sin x$, $0 \leq x \leq \pi/2$ is

- (a) $\sqrt{2}$ sq. units
- (b) $\sqrt{2} + 1$ sq. units
- (c) $(\sqrt{2} - 1)$ sq. units
- (d) $2\sqrt{2} - 1$ sq. units

2. The area of the region bounded by the curve $x^2 = 4y$ and the straight line $x = 4y - 2$ is

- (a) $3/8$ sq. units
- (b) $5/8$ sq. units
- (c) $7/8$ sq. units
- (d) $9/8$ sq. units

3. The area of the region bounded by the curve $y^2 = 9x$ and $y = 3x$ is

- (a) 1 sq. units
- (b) $1/2$ sq. units
- (c) 4 sq. units
- (d) 14 sq. units

4. Area of the region in the first quadrant enclosed by the x-axis, the line $y = x$ and the circle $x^2 + y^2 = 32$ is

- (a) 16π sq. units
- (b) 4π sq. units
- (c) 32π sq. units
- (d) 24π sq. units

5. Area of the region bounded by the curve $y = \cos x$ between $x = 0$ and $x = \pi$ is

- (a) 1 sq. units
- (b) 2 sq. units
- (c) 4 sq. units
- (d) 3 sq. units

6. The area of the region bounded by the curve $y^2 = x$ and the straight line $2y = x$ is

- (a) 1 sq. units
- (b) $1/2$ sq. units
- (c) $4/3$ sq. units
- (d) 14 sq. units

7. Find the area of the region included between the parabolas $y^2 = 4ax$ and $x^2 = 4ay$, where $a > 0$.

- (a) a^2 sq. units
- (b) $15a^2$ sq. units
- (c) $14a^2/3$ sq. units
- (d) $16a^2/3$ sq. units

8. The area of the part of circle $x^2 + y^2 = 16$, which is exterior to the parabola $y^2 = 6x$ is

- (a) $(32\pi/3 - 4\sqrt{3}/3)$ sq. units
- (b) $(32\pi/3 + 4\sqrt{3}/3)$ sq. units
- (c) $(32\pi/3 - 4\sqrt{3})$ sq. units
- (d) No such region exists

9. The area of the region bounded by the ellipse $\frac{x^2}{25} + \frac{y^2}{16} = 1$ is

- (a) 20π sq. units
- (b) $20\pi^2$ sq. units
- (c) $16\pi^2$ sq. units
- (d) $25\pi^2$ sq. units

10. Smaller area enclosed by the circle $x^2 + y^2 = 4$ and the line $x + y = 2$ is

- (a) $2(\pi - 2)$ sq. units
- (b) $(\pi - 2)$ sq. units
- (c) $2\pi - 1$ sq. units
- (d) $2(\pi + 2)$ sq. units

***** ANSWER KEYS*****

Q.1 - (c)	Q.2 - (d)	Q.3 - (b)	Q.4. - (b)	Q.5 - (b)
Q.6 - (c)	Q.7 - (d)	Q.8 - (a)	Q.9 - (a)	Q.10 - (b)