

JEE MAIN APPLICATION OF INTEGRALS — AREA BOUNDED BY CURVES AND LINES (CIRCLE, PARABOLA, ELLIPSE) — PYQS

Max. Marks: 20

Questions: 5

Section A (MCQ) — 4 questions

- Q.1** The area of the region $\{(x, y) : 0 \leq y \leq 6 - x, \text{ left. } 2 \geq 4x - 3, x \geq 0\}$ is :

[JEE Main 2026 (Online) 6th April Morning Shift]

- (1) 8 (2) 9 (3) 12 (4) 15

Scan or tap for the full solution 

- Q.2** The area of the region $A = \{(x, y) : 4x^2 + y^2 \leq 8 \text{ and } y^2 \leq 4x\}$ is:

[JEE Main 2026 (Online) 22nd January Evening Shift]

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

Scan or tap for the full solution 

- Q.3** The area of the region, inside the ellipse $x^2 + 4y^2 = 4$ and outside the region bounded by the curves $y = |x| - 1$ and $y = 1 - |x|$, is :

[JEE Main 2026 (Online) 21st January Morning Shift]

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

Scan or tap for the full solution 

- Q.4** A line passing through the point $A(-2, 0)$ touches the parabola $P: y^2 = x - 2$ at the point B in the first quadrant. The area of the region bounded by the line AB, parabola P and the x-axis, is :

[JEE Main 2025 (Online) 4th April Evening Shift]

- (1) 3 (2) $\frac{7}{3}$ (3) $\frac{8}{3}$ (4) 2

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Section B (Numerical) — 1 question

- Q.5** If the area of the region bounded by $16x^2 - 9y^2 = 144$ and $8x - 3y = 24$ is A, then $3(A + 6\log_e(3))$ is equal to _____.

[JEE Main 2026 (Online) 2nd April Evening Shift]

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ANSWER KEY

Section A (MCQ) — 4 questions

Ques.	1	2	3	4							
Ans.	2	1	3	3							

Section B (Numerical) — 1 question

Ques.	5										
Ans.	24										