

**MM 32****Applications of the Integrals****Time 1 hour****Section A 1 Marks Each****Paper prepared by****Dev Anoop****Mathematics Teacher****Bathinda****Email: devanoop@devanoop.com**

1. Find the area bounded by the curve, x axis and the lines $x = 0$ and $x = 4$.
2. On sketching the graph of $y = |x - 2|$ and evaluating $\int_{-1}^3 |x - 2| dx$, what does $\int_{-1}^3 |x - 2| dx$ represent on the graph?

Section B 6 Marks Each

3. Find the area bounded by the curve $y = x \sin x^2$, x axis and between $x=0$ and $x = \sqrt{\frac{\pi}{2}}$.
4. Draw the rough sketch of $y = \sin 2x$ and determine the area enclosed by the curve, x axis and the lines $x = \frac{\pi}{4}$ and $x = \frac{3\pi}{4}$.
5. Sketch the region bounded by the curve $y = \sqrt{5 - x^2}$ and $y = |x - 1|$ and find its area.
7. Using integration, find the area of the region bounded by the curves $y = x^2 + 2$, $y = x$, $x = 0$ and $x = 3$.
8. Find the area of the region bounded by the parabola $y^2 = 4x$ and the line $y = 2x$.

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