

ATOMIC ENERGY EDUCATION SOCIETY, MUMBAI

CLASS: XII (MATHS)
CHAPTER-8

WORKSHEET: MODULE- 2/2
TOPIC: APPLICATIONS OF INTEGRATION

1. Find the area lying above x-axis and included between the circle $x^2 + y^2 = 8x$ and inside of the parabola $y^2 = 4x$.
2. Find the area bounded by curves $(x - 1)^2 + y^2 = 1$ and $x^2 + y^2 = 1$.
3. Find the area of the region bounded by the curves $y = x^2 + 2, y = x, x = 0$ and $x = 3$.
4. Using integration find the area of the triangular region whose sides have the equations $y = 2x + 1, y = 3x + 1$ and $x = 4$.
5. Prove that the curves $y^2 = 4x$ and $x^2 = 4y$ divide the area of the square bounded by $x = 0, x = 4, y = 4$ and $y = 0$ into three equal parts.
6. Find the area of the region
 $\{(x, y): 0 \leq y \leq x^2 + 1, 0 \leq y \leq x + 1, 0 \leq x \leq 2\}$
7. Sketch the graph of $y = |x + 3|$ and evaluate $\int_{-6}^0 |x + 3| dx$.
8. Find the area of the smaller region bounded by the ellipse $\frac{x^2}{9} + \frac{y^2}{4} = 1$ and the line $\frac{x}{3} + \frac{y}{2} = 1$.
9. Using the method of integration find the area bounded by the curve $|x| + |y| = 1$.
10. Find the area of the region $\{(x, y): y^2 = 4x, 4x^2 + 4y^2 \leq 9\}$.
