

INDIAN SCHOOL MUSCAT

CLASS 12

DEPARTMENT OF MATHEMATICS

APPLICATION OF INTEGRALS

- 1) Find the area enclosed by the parabola $y = \frac{3x^2}{4}$ and the line $3x - 2y + 12 = 0$.
- 2) Find the area of the smaller region between the ellipse $9x^2 + y^2 = 36$ and the line $\frac{x}{2} + \frac{y}{6} = 1$
- 3) Using integration find the area of region bounded by the triangle whose vertices are (1,0),(2,2) and (3,1).
- 4) Using the method of integration find the area region bounded by the lines $x+2y=2, y-x=1$ and $2x+y=7$.
- 5) Find the area of the region enclosed between the two circles $x^2 + y^2 = 4$ and $(x - 2)^2 + y^2 = 4$
- 6) Find the area of the region bounded by $\{(x, y): x^2 \leq y \leq |x|\}$
- 7) Find the area of the region bounded the curve $y = \sqrt{1 - x^2}$, line $y = x$ and the positive x - axis.
- 8) Using integration ,find the area of the following region:
 $\{(x,y): |x - 1| \leq y \leq \sqrt{5 - x^2}\}$
- 9) Find the area of the region bounded the curve $y = 4x - x^2$ and the x -axis.
- 10) Find the area of the region $\{(x, y): 0 \leq y \leq x^2 + 1, 0 \leq y \leq x + 1, 0 \leq x \leq 2\}$
- 11) Find the area of the region $\{(x, y): x^2 + y^2 \leq 8x, y^2 \geq 4x; x \geq 0; y \geq 0\}$
- 12) Find the area bounded by the curve $y = 2x - x^2$ and the line $y = -x$.
- 13) Find the area bounded by the curves $y = 6x - x^2$ and $y = x^2 - 2x$.
- 14) Find the area bounded by the line $x = 0, x = 2$ and the curves $y = 2^x, y = 2x - x^2$.