

AREA UNDER CURVE

- The area of the region bounded by the curves $y = |x - 2|$, $x = 1$, $x = 3$ and the x -axis is
(a) 4 (b) 2 (c) 3 (d) 1
- The area bounded by the curves $y = \ln x$, $y = \ln |x|$, $y = |\ln x|$ and $y = \ln ||x||$ is
(a) 4 sq. units (b) 6 sq. units (c) 10 sq. units (d) None of these
- Ratio of the area cut off a parabola by any double ordinate is that of the corresponding rectangle contained by that double ordinate and its distance from the vertex is
(a) $\frac{1}{2}$ (b) $\frac{1}{3}$ (c) $\frac{2}{3}$ (d) 1
- The area bounded by the curves $x = a \cos^3 t$, $y = a \sin^3 t$ is
(a) $\frac{3\pi a^2}{8}$ (b) $\frac{3\pi a^2}{16}$ (c) $\frac{3\pi a^2}{32}$ (d) $3\pi a^2$
- The volume of a solid obtained by revolving about y -axis enclosed between the ellipse $x^2 + 9y^2 = 9$ and the straight line $x + 3y = 3$ in the first quadrant is
(a) 3π (b) 4π (c) 6π (d) 9π
- The volume of the frustum of a right circular cone. The radii of whose ends are respectively 10 cms and 16 cms and thickness is 4 cms, is
(a) 1232π (b) 332π (c) 1032π (d) 1132π
- The line segment joining the points $(1, m)$ and $(2, 2m)$ is revolved round the y -axis to form a frustum of a cone of the volume of the frustum is 14π then the value of m is equal to
(a) 2 (b) 4 (c) 6 (d) 8
- A frustum of sphere is made by cutting two parallel planes of any sphere. If radius of sphere is 5 cm and distance between the plane is 1 cm, then what will be the curved surface of frustum when the distance of first plane from the centre of sphere is 2 cm
(a) $5\pi m^2$ (b) $10\pi m^2$ (c) $15\pi m^2$ (d) $40\pi m^2$
- The volume of the solid generated by revolving about the y -axis the figure bounded by the parabola $y = x^2$ and $x = y^2$ is
(a) $\frac{21}{5}\pi$ (b) $\frac{24}{5}\pi$ (c) $\frac{5}{24}\pi$ (d) None of these
- The volume of the frustum of a cone of height 6 cm., and radii are 5 cms and 8 cms is
(a) 258 cc (b) 250 cc (c) 268 cc (d) 275 cc
- The part of the circle $x^2 + y^2 = 4$ between $x = 1$ and $x = 2$ is revolved about x -axis. The curved surface of the resulting solid is
(a) 2π (b) 4π (c) 6π (d) 8π
- The area bounded by curves $y = \cos x$ and $y = \sin x$ and ordinates $x = 0$ and $x = \frac{\pi}{4}$ is
(a) $\sqrt{2}$ (b) $\sqrt{2} + 1$ (c) $\sqrt{2} - 1$ (d) $\sqrt{2}(\sqrt{2} - 1)$
- The area formed by triangular shaped region bounded by the curves $y = \sin x$, $y = \cos x$ and $x = 0$ is
(a) $\sqrt{2} - 1$ (b) 1 (c) $\sqrt{2}$ (d) $1 + \sqrt{2}$
- Area between the curve $y = \cos x$ and x -axis when $0 \leq x \leq 2\pi$, is
(a) 2 (b) 4 (c) 3 (d) 0
- AOB is the positive quadrant of the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ where $OA = a$, $OB = b$. Then area between the arc AB and chord AB of the ellipse is
(a) πab (b) $(\pi - 2)ab$ (c) $\frac{ab(\pi - 2)}{4}$ (d) $\frac{ab(\pi + 2)}{4}$