

Class : XI<sup>th</sup>  
Date :

Subject : Maths  
DPP No. :6

## Topic :-Applications of Intergrals

- The area formed by triangular shared region bounded by the curves  $y = \sin x$ ,  $y = \cos x$  and  $x = 0$  is  
a)  $(\sqrt{2} - 1)$  sq unit      b) 1 sq unit      c)  $\sqrt{2}$  sq unit      d)  $(1 + \sqrt{2})$  sq unit
- The area of the region bounded by the curve  $y = 2x - x^2$  and the line  $y = x$  is  
a)  $1/2$       b)  $1/3$       c)  $1/4$       d)  $1/6$
- The area bounded by the curves  $y = e^x$ ,  $y = e^{-x}$  and  $y = 2$ , is  
a)  $\log(16/e)$       b)  $\log(4/e)$       c)  $2 \log(4/e)$       d)  $\log(8/e)$
- The area bounded by  $y = 4 - x^2$  and  $y = \left[3 + \frac{x^2}{4}\right]$ , where  $[\cdot]$  denotes greatest integer function, is  
a) 1 sq unit      b)  $\frac{1}{3}$  sq unit      c)  $\frac{2}{3}$  sq unit      d)  $\frac{4}{3}$  sq unit
- The value of  $m$  for which the area included between the curves  $y^2 = 4ax$  and  $y = mx$  equals,  $a^2/3$  is  
a) 1      b) 2      c) 3      d)  $\sqrt{3}$
- The area bounded by  $y = 2 - |2 - x|$  and  $y = \frac{3}{|x|}$  is  
a)  $\frac{4 + 3 \ln 3}{2}$       b)  $\frac{4 - 3 \ln 3}{2}$       c)  $\frac{3}{2} \ln 3$       d)  $\frac{1}{2} + \ln 3$
- The area of the region bounded by the curve  $9x^2 + 4y^2 - 36 = 0$  is  
a)  $9\pi$  sq units      b)  $4\pi$  sq units      c)  $36\pi$  sq units      d)  $6\pi$  sq unit
- The area of the plane region bounded by the curves  $x + 2y^2 = 0$  and  $x + 3y^2 = 1$  is equal to  
a)  $\frac{4}{3}$  sq units      b)  $\frac{5}{3}$  sq units      c)  $\frac{1}{3}$  sq units      d)  $\frac{2}{3}$  sq units
- The area included between curves  $y = x^2 - 3x + 2$  and  $y = -x^2 + 3x - 2$  is  
a)  $\frac{1}{6}$  sq unit      b)  $\frac{1}{2}$  sq unit      c) 1 sq unit      d)  $\frac{1}{3}$  sq unit
- The area bounded by the curve  $y^2 = x$  and the ordinate  $x = 36$  is divided in the ratio 1 : 7 by the ordinate  $x = a$ . Then  $a =$   
a) 8      b) 9      c) 7      d) 0
- Area of the region bounded by the curve  $y^2 = 4x$ ,  $y$ -axis and the line  $y = 3$  is  
a) 2 sq. units      b)  $9/4$  sq. units      c)  $6\sqrt{3}$  sq. units      d) None of these

12. The area bounded by the curve  $y = x + \sin x$  and its inverse function between the ordinates  $x = 0$  and  $x = 2\pi$ , is
- a)  $8\pi$  sq unit      b)  $4\pi$  sq unit      c)  $8$  sq unit      d) None of these
13. The area of the region bounded by  $y = 2x - x^2$  and the  $x$ -axis is
- a)  $\frac{8}{3}$  sq units      b)  $\frac{4}{3}$  sq units      c)  $\frac{7}{3}$  sq units      d)  $\frac{2}{3}$  sq units
14. The area of the closed figure bounded by  $y = 1/\cos^2 x, x = 0, y = 0$  and  $x = \pi/4$ , is
- a)  $\pi/4$       b)  $1 + \pi/4$       c)  $1$       d)  $2$
15. Area bounded by the curve  $y = x \sin x$  and  $x$ -axis between  $x = 0$  and  $x = 2\pi$  is
- a)  $2\pi$  sq unit      b)  $3\pi$  sq unit      c)  $4\pi$  sq unit      d)  $5\pi$  sq unit
16. The line  $y = mx$  bisects the area enclosed by the lines  $x = 0, y = 0, x = 3/2$  and the curve  $y = 1 + 4x - x^2$ . The value of  $m$ , is
- a)  $13/8$       b)  $13/32$       c)  $13/16$       d)  $13/4$
17. Area lying between the curves  $y^2 = 4x$  and  $y = 2x$  is equal to
- a)  $2/3$       b)  $1/3$       c)  $1/4$       d)  $1/2$
18. The area contained between the  $x$ -axis and one arc of the curve  $y = \cos 3x$ , is
- a)  $1/3$       b)  $2/3$       c)  $2/7$       d)  $2/5$
19. The area bounded by the curve  $y = \sec x$ , the  $x$ -axis and the lines  $x = 0$  and  $x = \pi/4$ , is
- a)  $\log(\sqrt{2} + 1)$       b)  $\log(\sqrt{2} - 1)$       c)  $\frac{1}{2} \log 2$       d)  $\sqrt{2}$
20. The area of the region bounded by the parabola  $y = x^2 + 1$  and the straight line  $x + y = 3$  is given by
- a)  $\frac{45}{7}$       b)  $\frac{25}{4}$       c)  $\frac{\pi}{18}$       d)  $\frac{9}{2}$