Date Planned : __ / __ / __	Daily Tutorial Sheet - 10	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	JEE Advanced (Archive)	Exact Duration :________

91. Sketch the curves and identify the region bounded by $x = 1/2, x = 2, y = \log x$ and $y = 2^x$. Find the area of this region. **(1991)**

92. Compute the area of the region bounded by the curves $y = ex \log x$ and $y = \frac{\log x}{ex}$, where log e = 1. **(1990)**

93. Find maximum and minimum value of the function $y = x(x-1)^2, 0 \le x \le 2$. Also, determine the area bounded by the curve $y = x(x-1)^2$, the Y-axis and the line x = 2. **(1989)**

94. Find the area of the region bounded by the curve C : y = tan x, tangent drawn to C at $x = \pi/4$ and the X-axis. **(1988)**

95. Find the area bounded by the curves $x^2 + y^2 = 25, 4y = |4 - x^2|$ and x = 0 above the X-axis. **(1987)**

96. Find the area bounded by the curves $x^2 + y^2 = 4, x^2 = -\sqrt{2}y$ and $x = y$. **(1986)**

97. Sketch the region bounded by the curves $y = \sqrt{5 - x^2}$ and $y = |x - 1|$ and find its area. **(1985)**

98. Find the area of the region bounded by the X-axis and the curves defined by $y = \tan x, -\frac{\pi}{3} \le x \le \frac{\pi}{3}$ and $y = \cot x, \frac{\pi}{6} \le x \le \frac{\pi}{3}$. **(1984)**

99. Find the area bounded by the X-axis, part of the curve $y = \left(1 + \frac{8}{x^2}\right)$ and the ordinates at x = 2 and x = 4. If the ordinates at $x = a$ divides the area into two equal parts, then find a. **(1983)**

100. Find the area bounded by the curve $x^2 = 4y$ and the straight line $x = 4y - 2$. **(1983)**

101. The area of the region $\left\{(x, y) : xy \le 8, 1 \le y \le x^2\right\}$ is : **(2019)**

(A) $8\log_e 2 - \frac{14}{3}$ **(B)** $8\log_e 2 - \frac{7}{3}$ **(C)** $16\log_e 2 - 6$ **(D)** $16\log_e 2 - \frac{14}{3}$

102. If $I = \frac{2}{\pi}\int_{-\pi/4}^{\pi/4} \frac{dx}{\left(1 + e^{\sin x}\right)\left(2 - \cos 2x\right)}$ then $27I^2$ equals______. **(2019)**

103. The value of the integral $\int_0^{\pi/2} \frac{3\sqrt{\cos\theta}}{\left(\sqrt{\cos\theta} + \sqrt{\sin\theta}\right)} d\theta$ equals _________. **(2019)**