MATHEMATICS LECTURES FOR IIT-JEE BY MANISH KALIA

<u>Area</u>

JEE-MAINS (PREVIOUS YEAR)

MCQ – Single Correct

1.	The area (in sq. units) of the region {(x,y):x ≥ 0 , x + y ≤ 3 , x ² ≤ 4 y and y $\le 1 + \sqrt{x}$ } is :		
	(1) $\frac{59}{12}$	(2) $\frac{3}{2}$	
	(3) $\frac{7}{3}$	(4) $\frac{5}{2}$	[2017]
2.	The area (in sq. units) of the region {(x,y) : $y^2 \ge 2x$ and $x^2 + y^2 \le 4x$, $x \ge 0$, $y \ge 0$ } is :		
	(1) $\pi - \frac{8}{3}$	(2) $\pi - \frac{4\sqrt{2}}{3}$	
	(3) $\frac{\pi}{2} - \frac{2\sqrt{2}}{3}$	(4) $\pi - \frac{4}{3}$	[2016]
3.	The area (in square units) of the region described by $\{(x,y) : y^2 \le 2x \text{ and } y \ge 4x - 1\}$ is :		
	(1) $\frac{5}{64}$	(2) $\frac{15}{64}$	
	(3) $\frac{9}{32}$	(4) $\frac{7}{32}$	[2015]
4.	The area of the region described by A = {(x,y) : $x^2 + y^2 \le 1$ and $y^2 \le 1 - x$ } is [2014]		[2014]
	(1) $\frac{\pi}{2} + \frac{4}{3}$	(2) $\frac{\pi}{2} - \frac{4}{3}$	
	(3) $\frac{\pi}{2} - \frac{2}{3}$	(4) $\frac{\pi}{2} + \frac{2}{3}$	
5.	The area (in square units) bounded by the curves $y = \sqrt{x}$, $2y - x + 3 = 0$, x-axis, and lying in		

5. The area (in square units) bounded by the curves $y = \sqrt{x}$, 2y - x + 3 = 0, x-axis, and lying in the first quadrant is

(1) 36 (2) 18

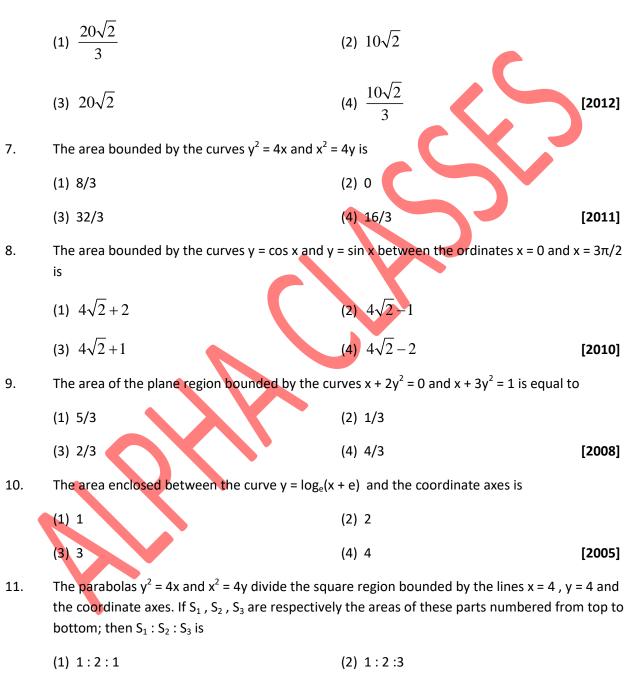


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(3)
$$\frac{27}{4}$$
 (4) 9 [2013]

6. The area bounded between the parabola $x^2 = \frac{y}{4}$ and $x^2 = 9y$ and the straight line y = 2 is



^{(3) 2:1:2 (4) 1:1:1 [2005]}



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12. Let f(x) be a non-negative continuous function such that the area bounded by the curve y = f(x), x-axis and the ordinates x = 3 : $\sqrt{2}$ and x = $\beta > \pi/4$ is $\left(\beta \sin \beta + \frac{\pi}{4} \cos \beta + \sqrt{2}\beta\right)$. Then f($\pi/2$) is (1) $\left(\frac{\pi}{4} + \sqrt{2} - 1\right)$ (2) $\left(\frac{\pi}{4} - \sqrt{2} + 1\right)$ (4) $\left(1-\frac{\pi}{4}+\sqrt{2}\right)$ (3) $1 + \frac{1}{42!} + \frac{1}{164!} + \frac{1}{646!} + \dots$ [2005] The area of the region bounded by the curves y = |x-2|, x = 1, x = 3 and the x-axis is 13. (1) 1 (2) 2 (3) 3 (4) 4 [2004] The area of the region bounded by the curves y = |x - 1| and y = 3 - |x| is 14. (2) 3 sq units (1) 2 sq units (3) 4 sq units (4) 6 sq units [2003] 15. The area bounded by the curves $y = \ln x$, $y = \ln |x|$, $y = |\ln x|$ and $y = |\ln| |x|$ is (1) 4 sq. units (2) 6 sq. units (4) none of these [2002] (3) 10 sq. units

