1.   Find the area of the region bounded by the curve $x^2 = 4y$ and the line $x = 4y - 2$

(a) 8/9   (b) 9/8   (c) 9   (d) None of these

2.   Using integration, the area of the region bounded by the lines $2y = -x + 8$, $x - axis$ and the line $x = 2$ and $x = 4$ is

(a)   4 sq. units   (b)   5 sq. units

(c)   3 sq.units   (d)   6 sq. units

3.   The area of the region bounded by $y = 2x - x^2$ and $x - axis$ is

(a) $\dfrac{8}{3}$ sq. units   (b) $\dfrac{4}{3}$ sq. unit (c) $\dfrac{7}{3}$ sq. units   (d)None of these

4.   The area of the region bounded by the curve $y^2 = 2y - x$ and the $y - axis$ is

(a) $\dfrac{1}{3}$ sq. units   (b) $\dfrac{2}{3}$ sq. units (c) $\dfrac{4}{3}$ sq. units (d) $\dfrac{5}{3}$ sq. units

5.   Using integration, the area of the region bounded by the curves $y = x^2 + 2$, $y = x$, $x = 0$ and $x = 3$ is

(a)   9.5 sq. Units   (b)   8.5 sq. units

(c)   10.5 sq. units   (d)   None of these

6.   The area enclosed by the curve y = $\log_e$ x and the straight line y= 0 between x = 1 and x = 2 is (in sq units).

(a)   2 + 2 ln 2   (b)   2 ln 2   (c)   ln 2   (d)   -1 + 2 ln 2

7.   The area bounded by the curve $y^2 = 9x$ and the lines $x = 1, x =$ 4, and y = 0 in   the first   quadrant is

(a)   7   (b)   14   (c)   28   (d)   14/3

8   The area bounded by the curve $y = \log x$, the x-axis and the line $x = 2$ is given by

(a) $1 + \dfrac{1}{2}$ (b) e   (c) 1   (d) $1 - \dfrac{1}{e}$

9. If $c > 0$ and the area of the region enclosed by the parabolas

$y = x^2 - c^2$ and $y = c^2 - x^2$ is 576, then c =

(a) 6   (b) 4   (c) 3   (d) 8

10. What is the area bounded by $y^2 = 4ax$ and its latus rectum?

(a) $6\,a^2$ (b) $4\,a^2$ (c) $(3/5)\,a^2$ (d) $(8/3)a^2$

11. What is the area between the curves $y^2 = 4ax$ and $x^2 = 4ay$?

12. Find the area bounded by $x^2 = 2x - y$ and x-axis .

13. Find the area of the circle $x^2 + y^2 = a^2$ using integrals .

14. Find the area common to $y^2 = 6x$ and $x^2 + y^2 = 16$

15. Find the area bounded by $y^2 = x$ and line x +y = 2.

16. Find the area above x-axis and included between $x^2 + y^2 = 8x$ and $y^2 = 4x$.

17. Find the area of circle $x^2 + y^2 = 16$ which is exterior to parabola $y^2 = 6x$.

18. Find the area of the region bounded by $y^2 = 2x +1$ and line x − y -1 =0

19. Using integration, find the area bounded between $y = |x + 1|$, x +4 = 0 and x -2 = 0 .

20. Show that the area under the curves y = sin x and y = sin 2x between x 0 and x = $\pi/2$
are in ratio 2 : 3 .