MATHS

BOOKS - NIKITA MATHS (HINGLISH)

APPLICATION OF DEFINITEINTEGRAL

Multiple Choice Questions Mcq

1. The area bounded by the line y = x, X-axis and the lines x = -1, x = 2 is

A. $\frac{5}{2} sq.\ units$

B. $\frac{3}{2} sq.\ units$

C. $\frac{1}{3} sq.\ units$

D. $\frac{2}{3} sq.\ units$

Answer: a

Watch Video Solution

2. The area bounded by the curve $y = x^3$, X-axis and the lines x = 1, x = 3 is

A. 5 sq. units

B. 10 sq. units

C. 20 sq. units

D. 40 sq. units

Answer: c

Watch Video Solution

3. The area bounded by the curve $y = x^4$, X-axis and the lines x = 1, x = 5 is

A. $\frac{3124}{5} sq.\ units$

B. $\frac{3126}{5} sq.\ units$

C. $\frac{624}{5} sq.\ units$

D. $\frac{626}{5} sq.\ units$

Answer: a

Watch Video Solution

4. The area bounded by the curve $y = \left(x^2 + 2\right)^2 + 2x$, X-axis and the lines x = 0, x = 2 is

A. $\frac{436}{15} sq.\ units$

B. $\frac{436}{5} sq.\ units$

C. $\frac{218}{15} sq.\ units$

D. $\frac{218}{5} sq.\ units$

Answer: a

Watch Video Solution

5. Find the area of the region bounde by the curve $y = \sqrt{16 - x^2}$, the X - axis and the lines $x = 0, x = 4.$

A. $\pi sq.\ units$

B. $4\pi sq.\ units$

C. $2\pi sq.\ units$

D. $8\pi sq.\ units$

Answer: b

Watch Video Solution

6. The area bounded by the loop of the curve $y^2 = x^2(1-x)$ is

A. $\frac{2}{5} sq.\ units$

B. $\frac{8}{5} sq.\ units$

C. $\frac{2}{15} sq.\ units$

D. $\frac{8}{15} sq.\ units$

Answer: d

Watch Video Solution

7. The area bounded by the curve $xy = c^2$, X-axis and the lines x = c, x = 2c is

A. log 2 sq. units

B. c log 2 sq. units

C. c^2 log 2 sq. units

D. 2c log 2 sq. units

Answer: c

Watch Video Solution

8. Find the area of the region bounded by the curve $y = \sin x$, the lines $x = -\frac{\pi}{2}, x = \frac{\pi}{2}$ and X- axis.

A. 0 sq. units

B. 1 sq. units

C. $-1 sq.\ units$

D. 2 sq. units

Answer: D

Watch Video Solution

9. Find the area of the region bounded by the curve $y = \sin x$ between $x = 0$ and $x = 2\pi$.

A. 2 sq. units

B. 4 sq. units

C. 8 sq. units

D. 16 sq. units

Answer: b

Watch Video Solution

10. x=0 एवं $x = 2\pi$ के मध्य वक्र $y = \cos x$ से घिरे क्षेत्र का क्षेत्रफल ज्ञात कीजिए |

A. 2 sq. units

B. 4 sq. units

C. 8 sq. units

D. 16 sq. units

Answer: b

Watch Video Solution

11. The area bounded by the curve $y = \sin^2 x, 0 \leq x \leq \frac{\pi}{2}$, X axis and the line $x = \frac{\pi}{2}$ is

A. $\frac{\pi}{4} sq.\ units$

B. $\frac{\pi}{2} sq.\ units$

C. $\frac{3\pi}{2} sq.\ units$

D. $\frac{3\pi}{4} sq.\ units$

Answer: A

Watch Video Solution

12. Find the area of the region bounded by the curve $y = \sin x$ between $x = 0$ and $x = 2\pi$.

A. 0

B. $2\pi sq.\ units$

C. $\pi sq.\ units$

D. $4\pi sq.\ units$

Answer: d

Watch Video Solution

13. The area bounded by the curve y = log x, X-axis and the ordinates x = 1, x = 2 is

A. log 4 sq. units

B. log 2 sq. units

C. (log 4 - 1) sq. units

D. (log 4 + 1) sq. units

Answer: c

Watch Video Solution

14. The area enclosed between the curve $y = \log_e(x + e)$ and the coordinate axes is

A. 3 sq. units

B. 4 sq. units

C. 2 sq. units

D. 1 sq. units

Answer: D

Watch Video Solution

15. Examples: Find the area bounded by the parabola $y^2 = 4ax$ and its latus rectum.

A. $\frac{4a^2}{3} sq.\ units$

B. $\frac{8a^2}{3} sq.\ units$

C. $\frac{4a\sqrt{a}}{3} sq.\ units$

D. $\frac{8a\sqrt{a}}{3} sq.\ units$

Answer: b

Watch Video Solution

16. The area bounded by the curve $y^2 = 16x$ and the line x = 4 is

A. $\frac{128}{3} sq.\ units$

B. $\frac{64}{3} sq.\ units$

C. $\frac{32}{3} sq, units$

D. $\frac{16}{3} sq.\ units$

Answer: a

Watch Video Solution

17. The area bounded by the curve $y^2 = 14x$ and the lines x = 1, x = 4 above X-axis is

A. $\frac{7}{3} sq.\ units$

B. $\frac{14}{3} sq.\ units$

C. $\frac{28}{3} sq.\ units$

D. $\frac{56}{3} sq.\ units$

Answer: c

Watch Video Solution

18. The area bounded by the curve $y = x^2$, X-axis and the lines x = 1, x = 3 is

A. $\frac{26}{3} sq.\ units$

B. $\frac{28}{3} sq.\ units$

C. $\frac{1}{3} sq.\ units$

D. 9 sq. units

Answer: a

Watch Video Solution

19. The area bounded by the parabola $y = 4x^2$

, Y-axis and the lines y = 2, y = 4 is

A. $\frac{4-\sqrt{2}}{3} sq.\ units$

B. $\frac{8-\sqrt{2}}{3} sq.\ units$

C. $\frac{4-2\sqrt{2}}{3} sq.\ units$

D. $\frac{8-2\sqrt{2}}{3} sq.\ units$

Answer: d

Watch Video Solution

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

A. $\frac{16}{3} sq.\ units$

B. $\frac{32}{3} sq.\ units$

C. $\frac{16\sqrt{2}}{3} sq.\ units$

D. $\frac{32\sqrt{2}}{3} sq.\ units$

Answer: b

Watch Video Solution

21. Find the area under the curve $y = \sqrt{6x + 4}$ (above the x-axis) from $x = 0$ to $x = 2$

A. $\frac{56}{9} sq.\ units$

B. $\frac{28}{9} sq.\ units$

C. $\frac{56}{3} sq.\ units$

D. $\frac{28}{3} sq.\ units$

Answer: A

Watch Video Solution

22. The area of the region bounded by the parabola $y = x^2 + 2$ and the lines y = x, x = 0 and x = 3 is

A. $\frac{7}{2} sq.\ units$

B. $\frac{17}{2} sq.\ units$

C. $\frac{21}{2} sq.\ units$

D. $\frac{15}{2} sq.\ units$

Answer: c

Watch Video Solution

23. The area bounded by the curve $y = 2x - x^2$ and the line y = - x is

A. $\frac{3}{2} sq.\ units$

B. $\frac{9}{2} sq.\ units$

C. $\frac{4}{3} sq.\ units$

D. $\frac{19}{6} sq.\ units$

Answer: b

Watch Video Solution

24. The area bounded by the parabola $y = 4x - x^2$ and X-axis is

A. $\frac{4}{3} sq.\ units$

B. $\frac{8}{3} sq.\ units$

C. $\frac{16}{3} sq.\ units$

D. $\frac{32}{3} sq.\ units$

Answer: d

Watch Video Solution

25. Find the area enclosed by the circle $x^2 + y^2 = 25$

A. $50\pi sq.\ units$

B. $25\pi sq.\ units$

C. $5\pi sq.\ units$

D. $10\pi sq.\ units$

Answer: b

Watch Video Solution

26. The area bounded by the ellipse $b^2x^2 + a^2y^2 = a^2b^2$ is

A. $\pi absq.\ units$

B. 2π absq. $Units$

C. $\frac{\pi}{2}$ absq. $units$

D. $3\frac{\pi}{2}$ absq. $units$

Answer: a

Watch Video Solution

27. The area bounded by the ellipse $\frac{x^2}{4}+\frac{y^2}{25}=1$ is

A. $2\pi sq.\ units$

B. $5\pi sq.\ units$

C. $20\pi sq.\ units$

D. $10\pi sq.\ units$

Answer: d

Watch Video Solution