RAMA STUDY CENTRE WHATSAPP - 8754834604

XII - STANDARD - MATHEMATICS

CHAPTER - 9 [IMPORTANT QUESTIONS]

If you need answer means cost Rs - 25/-

1) Find an approximate value of $\int_1^{1.5} x^2\,dx$ by applying the right end rule with the partition $\{1.1, 1.2, 1.3, 1.4, 1.5\}$

2) Evaluate $\int_0^1 x^3\,dx$, as the limit of a sum

3) Evaluate $\int_0^{\pi/3} \frac{\sec x \tan x}{1+\sec^2 x}\,dx$

4) Evaluate: $\int_0^{1.5} [x^2]\,dx$, where $[x]$ is greatest integer form

5) Prove that $\int_0^{\pi/4} \frac{dx}{a^2\sin^2 x + b^2\cos^2 x} = \frac{1}{ab}\tan^{-1}\left(\frac{a}{b}\right)$, where $a, b > 0$

6) If $f(x) = f(a+x)$, then $\int_0^{2a} f(x)\,dx = 2\int_0^a f(x)\,dx$

7) Evaluate $\int_0^a \frac{f(x)}{f(x)+f(a-x)}\,dx$

8) Prove that $\int_0^{\pi/4} \log(1+\tan x)\,dx = \pi/8 \log 2$

9) $\int_0^1 (\tan^{-1} x + \tan^{-1}(1-x))\,dx = \pi/2 - \log_e 2$ to be prove.

10) Evaluate $\int_2^3 \frac{\sqrt{x}}{\sqrt{5-x}+\sqrt{x}}\,dx$

11) Evaluate $\int_0^{\pi} x^2 \cos nx\,dx$, where n is a positive integer

12) Evaluate $\int_0^{\infty} \frac{1}{a^2+x^2}\,dx$, $a > 0$, $b \in R$

13) Evaluate $\int_0^{\pi/2} dx / 4\sin^2 x + 5\cos^2 x$

14) Evaluate $\int_0^{\pi/2} \begin{vmatrix} \cos^4 x & 7 \\ \sin^5 x & 3 \end{vmatrix} dx$

15) Evaluate $\int_0^1 x^3(1-x)^4\,dx$

16) Evaluate $\int_0^{\infty} x^n/n^x\,dx$, where n is positive integer ≥ 2

17) Find the area of the region bounded by between the parabola $y^2 = 4ax$ and its latus rectum

18) Find the area of region bounded by $y = \cos x$, $y = \sin x$, the lines $x = \pi/4$ and $x = 5\pi/4$

19) Find the area of region bounded by $y = \tan x$, $y = \cot x$ and the lines $x = 0$, $x = \pi/2$, $y = 0$

20) Find the volume of solid formed by revolving the region bounded by parabola $y = x^2$, x-axis, $x = 0$ and $x = 1$ are ordinates

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G. Rajesh M.Sc, B.Ed, MBA, M.Sc(psh), MA(Edu)
MA(Yoga), MA(Tam), Dept of mathematics