



ST. LAWRENCE HIGH SCHOOL
A JESUIT CHRISTIAN MINORITY INSTITUTION



Worksheet-10

SUBJECT – MATHEMATICS

Pre-test

Chapter: Integration

Class: XII

Topic: Indefinite Integral

Date: 22.06.2020

Choose the correct option

(1 X 15= 15)

1. $\int x^n dx = ?$

- a) nx^{n-1}
- b) $\frac{x^{n+1}}{n+1} + c$
- c) $\frac{x^{n+1}}{n+1} + c$, When $n \neq -1$
- d) None of these.

1.c

2. If k is a constant, then the integral of k w.r.t x is -

- a) $\frac{k}{x} + c$
- b) kx
- c) $kx+c$
- d) $kx^2 + c$

2.c

3. If $\frac{dy}{dx} = 6x$, then $y = ?$

- a) 6
- b) $3x^2$
- c) $2x^2$
- d) $6x^2$

3.b

4. $\int \sec^3 x \operatorname{cosec}^2 x dx$ is a function of -

- a) $\tan x$
- b) $\sin x$
- c) $\cos x$
- d) none of these.

4.a

5. $\int \cot^2 x \, dx = ?$

- a) $\cot x - x$
- b) $x - \cot x + c$
- c) $x + \cot x + c$
- d) $-x - \cot x + c$

5.d

6. To evaluate $\int \sin^2 x \, dx$, we use the formulae of -

- a) $\sin 2x$
- b) $\cos 2x$
- c) $\tan 2x$
- d) *None of these*

6.b

7. $\int \sin x^\circ \, dx$ is -

- a) $\frac{\pi}{180} \cos x^\circ + c$
- b) $\frac{180}{\pi} \cos x^\circ + c$
- c) $-\frac{180}{\pi} \cos x^\circ + c$
- d) $-\frac{\pi}{180} \cos x^\circ + c$

7.c

8. The value of $\int 2^{3x} \, dx = ?$

- a) $\frac{2^{3x}}{3 \log 2}$
- b) $\frac{2^{3x}}{3 \log 2} + c$
- c) $\frac{3 \times 2^{3x}}{\log 2} + c$
- d) $3 \log 2 \times 2^{3x} + c$

8.b

9. $\int e^{5 \log x} \, dx = ?$

- a) $\frac{e^{5 \log x}}{5}$
- b) $\frac{e^{5 \log x}}{5 \log x} + c$
- c) $\frac{x^5}{5} + c$
- d) $\frac{x^6}{6} + c$

9.d

10. $\int \frac{x^2+1}{x} \, dx = ?$

- a) $\frac{1}{2} x^2 + \log|x| + c$
- b) $\frac{1}{2} x^2 + \log x + c$
- c) $x + \log|x| + c$
- d) $x^2 + \log|x| + c$

10.a

11. If the derivative of a function is $\sqrt{x}$, then the function is -

- a) $\frac{1}{2\sqrt{x}} + c$
- b) $\frac{2}{3}x^{\frac{3}{2}} + c$
- c) $\frac{3}{2}x^{\frac{3}{2}} + c$
- d) $\frac{2}{3\sqrt{x}} + c$

11.b

12. If $\frac{dy}{dx} = 3x^2 - 2$, then $y = ?$

- a) $x^3 - 2x + c$
- b) $x^3 - 2x$
- c) $\frac{3}{2}x^2 - 2x + c$
- d) $x^3 - 2x^2 + c$

12.a

13. If $m \neq 0$, then $\int \sec mx \tan mx \, dx = ?$

- a) $m \sec mx + c$
- b) $m \tan mx + c$
- c) $\frac{\sec mx}{m} + c$
- d) $\frac{\tan mx}{m} + c$

13.c

14. $\int \frac{2-3\sin x}{\cos^2 x} \, dx = ?$

- a) $2 \tan x - 3 \sec x + c$
- b) $\tan x - 3 \sec x + c$
- c) $2 \tan x - \sec x + c$
- d) $3 \tan x - 2 \sec x + c$

14.a

15. $\int \frac{x}{\sqrt{x}+1} \, dx = ?$

- a) $\frac{2}{3}x^{\frac{3}{2}} - x + 2x^{\frac{1}{2}} + 2 \log|\sqrt{x} + 1| + c$
- b) $\frac{2}{3}x^{\frac{3}{2}} + 2x^{\frac{1}{2}} + 2 \log|\sqrt{x} + 1| + c$
- c) $\frac{2}{3}x^{\frac{3}{2}} - x + 2 \log|\sqrt{x} + 1| + c$
- d) $\frac{2}{3}x^{\frac{3}{2}} - x + 2x^{\frac{1}{2}} + \log|\sqrt{x} + 1| + c$

15.a