Class 12 Mathematics · Chapter 7: Integrals

Worksheet · 20 marks · about 40 minutes · based on NCERT

Name _____ Class and section _____ Date _____

Scan for the free Class 12 Mathematics test

1. $\int (\cos 4x - e^{-x})\, dx$ equals [1]

(a) $\frac{1}{4}\sin 4x - e^{-x} + C$ (b) $\frac{1}{4}\sin 4x + e^{-x} + C$

(c) $-\frac{1}{4}\sin 4x + e^{-x} + C$ (d) $4\sin 4x + e^{-x} + C$

2. $\int \frac{dx}{x^2 + 25}$ equals [1]

(a) $\frac{1}{25}\tan^{-1}\frac{x}{5} + C$ (b) $\frac{1}{5}\tan^{-1}\frac{x}{5} + C$

(c) $\tan^{-1}\frac{x}{5} + C$ (d) $\frac{1}{10}\log\left|\frac{x-5}{x+5}\right| + C$

3. $\int \operatorname{cosec} x\, dx$ equals [1]

(a) $-\operatorname{cosec} x \cot x + C$ (b) $\log|\operatorname{cosec} x + \cot x| + C$

(c) $\log|\operatorname{cosec} x - \cot x| + C$ (d) $\log|\sin x| + C$

4. F is an anti derivative of $f(x) = 6x^2 - 4x + 1$ with $F(1) = 5$. Then $F(2)$ equals [1]

(a) 18 (b) 10

(c) 14 (d) 9

5. $\int (\sec x \tan x + 2x)\, dx$ equals [1]

(a) $\tan x + x^2 + C$ (b) $\sec x + x^2 + C$

(c) $\frac{1}{2}\sec^2 x + x^2 + C$ (d) $\sec x \tan x + x^2 + C$

6. The slope of the tangent to a curve at (x, y) is $3x^2 - \frac{2}{x^2}$, and the curve passes through (1, 4). Find the equation of the curve. [2]

7. Find $\int \frac{e^x + 1}{e^x + x}\, dx$. [2]

8. Evaluate $\int_0^1 \frac{x}{\sqrt{(1 + 3x^2)}}\, dx$. [2]

9. Find $\int \sin^2 x \cos^2 x\, dx$. [3]

Every question original, written from NCERT, checked by a second reviewer · photocopy freely for your class

10. Show that $\int_1^2 \frac{e^x}{e^x + e^{3-x}}\,dx = \frac{1}{2}$. [3]

11. Evaluate $\int_1^{5/2} \sqrt{(8 + 2x - x^2)}\,dx$. [3]

Every question original, written from NCERT, checked by a second reviewer · photocopy freely for your class