INDEFINITE INTEGRALS-IV

1. $\int \frac{dx}{(9+x^2)} = ?$

(a) $\tan^{-1}\frac{x}{3}+C$ (b) $\frac{1}{3}\tan^{-1}\frac{x}{3}+C$ (c) $3\tan^{-1}\frac{x}{3}+C$ (d) none of these

2. $\int \frac{dx}{(4+16x^2)} = ?$

(a) $\frac{1}{32}\tan^{-1}4x+C$ (b) $\frac{1}{16}\tan^{-1}\frac{x}{2}+C$ (c) $\frac{1}{8}\tan^{-1}2x+C$ (d) $\frac{1}{4}\tan^{-1}\frac{x}{2}+C$

3. $\int \frac{dx}{(9+4x^2)}dx = ?$

(a) $\frac{1}{2}\tan^{-1}\frac{2x}{3}+C$ (b) $\frac{1}{6}\tan^{-1}\frac{2x}{3}+C$ (c) $\frac{1}{6}\tan^{-1}\frac{3x}{2}+C$ (d) none of these

4. $\int \frac{\sin x}{(1+\cos^2 x)}dx = ?$

(a) $-\tan^{-1}(\cos x)+C$ (b) $\cot^{-1}(\cos x)+C$ (c) $-\cot^{-1}(\cos x)+C$ (d) $\tan^{-1}(\cos x)+C$

5. $\int \frac{\cos x}{(1+\sin^2 x)}dx = ?$

(a) $-\tan^{-1}(\sin x)+C$ (b) $\tan^{-1}(\cos x)+C$ (c) $\tan^{-1}(\sin x)+C$ (d) $-\tan^{-1}(\cos x)+C$

6. $\int \frac{e^x}{(e^{2x}+1)}dx = ?$

(a) $\cot^{-1}(e^x)+C$ (b) $\tan^{-1}(e^x)+C$ (c) $2\tan^{-1}(e^x)+C$ (d) none of these

7. $\int \frac{3x^5}{(1+x^{12})}dx = ?$

(a) $\tan^{-1}x^6+C$ (b) $\frac{1}{4}\tan^{-1}x^6+C$ (c) $\frac{1}{2}\tan^{-1}x^6+C$ (d) none of these

8. $\int \frac{2x^3}{(4+x^8)}dx = ?$

(a) $\frac{1}{2}\tan^{-1}\frac{x^4}{2}+C$ (b) $\frac{1}{4}\tan^{-1}\frac{x^4}{2}+C$ (c) $\frac{1}{2}\tan^{-1}x^4+C$ (d) none of these

9. $\int\frac{dx}{(x^2+4x+8)}=?$

(a) $\frac{1}{2}\tan^{-1}\left(\frac{x+2}{2}\right)+C$ (b) $\frac{1}{2}\tan^{-1}\left(\frac{x+2}{2}\right)+C$ (c) $\frac{1}{2}\tan^{-1}(x+2)+C$

(d) $\tan^{-1}\left(\frac{x+2}{2}\right)+C$

10. $\int\frac{dx}{(2x^2+x+3)}=?$

(a) $\frac{1}{\sqrt{23}}\tan^{-1}\left(\frac{4x+1}{\sqrt{23}}\right)+C$ (b) $\frac{1}{\sqrt{23}}\tan^{-1}\left(\frac{x+1}{\sqrt{23}}\right)+C$

(c) $\frac{2}{\sqrt{23}}\tan^{-1}\left(\frac{4x+1}{\sqrt{23}}\right)+C$ (d) none of these.

11. $\int\frac{dx}{(e^x+e^{-x})}=?$

(a) $\tan^{-1}(e^x)+C$ (b) $\tan^{-1}(e^{-x})+C$ (c) $-\tan^{-1}(e^{-x})+C$ (d) none of these

12. $\int\frac{x^2}{(9+4x^2)}=?$

(a) $\frac{x}{4}-\frac{1}{8}\tan^{-1}\frac{x}{3}+C$ (b) $\frac{x}{4}-\frac{3}{8}\tan^{-1}\frac{x}{3}+C$

(c) $\frac{x}{4}-\frac{3}{8}\tan^{-1}\frac{2x}{3}+C$ (d) none of these .

13. $\int\frac{(x^2-1)}{(x^2+4)}dx=?$

(a) $x-5\tan^{-1}\frac{x}{2}+C$ (b) $x-\frac{5}{2}\tan^{-1}\frac{x}{2}+C$ (c) $x-\frac{5}{2}\tan^{-1}\frac{5x}{2}+C$ (d) none of these

14. $\int\frac{dx}{(4+9x^2)}=?$

(a) $\frac{2}{3}\tan^{-1}\frac{3x}{2}+C$ (b) $\frac{1}{6}\tan^{-1}3x+C$ (c) $\frac{1}{6}\tan^{-1}\frac{3x}{2}+C$ (d) none of these

15. $\int\frac{dx}{(4x^2-4x+3)}=?$

(a) $\frac{1}{\sqrt{2}}\tan^{-1}\left(\frac{2x-1}{\sqrt{2}}\right)+C$ (b) $\frac{1}{2\sqrt{2}}\tan^{-1}\left(\frac{2x-1}{\sqrt{2}}\right)+C$

(c) $-\frac{1}{\sqrt{2}}\tan^{-1}\left(\frac{2x-1}{\sqrt{2}}\right)+C$ (d) none of these

16. $\int\frac{dx}{(\sin^4 x+\cos^4 x)}=?$

(a) $\frac{1}{\sqrt{2}}\tan^{-1}\left(\frac{\tan^2 x-1}{\sqrt{2}\tan x}\right)+C$ (b) $\frac{1}{\sqrt{2}}\tan^{-1}\left(\frac{\tan^2 x-1}{\tan x}\right)+C$

(c) $\frac{1}{\sqrt{2}}\tan^{-1}\left(\frac{1}{\sqrt{2}\tan x}\right)+C$ (d) none of these

17. $\int\frac{(x^2+1)}{(x^4+x^2+1)}dx=?$

(a) $\tan\frac{(x^2-1)}{\sqrt{3}}+C$ (b) $\frac{1}{\sqrt{3}}\tan^{-1}\frac{(x^2-1)}{\sqrt{3}}+C$

(c) $\frac{1}{\sqrt{3}}\tan^{-1}\frac{(x^2-1)}{\sqrt{3x}}+C$ (d) none of these

18. $\int\frac{\sin 2x}{(\sin^4 x+\cos^4 x)}dx=?$

(a) $\tan^{-1}(\tan^2 x)+C$ (b) x^2+C (c) $-\tan^{-1}(\tan^2 x)+C$ (d) none of these

19. $\int\frac{dx}{(1-9x^2)}=?$

(a) $\frac{1}{3}\log\left|\frac{1+3x}{1-3x}\right|+C$ (b) $\frac{1}{3}\log\left|\frac{1-3x}{1+3x}\right|+C$ (c) $\frac{1}{6}\log\left|\frac{1+3x}{1-3x}\right|+C$ (d) $\frac{1}{6}\log\left|\frac{1-3x}{1+3x}\right|+C$

20. $\int\frac{dx}{(16-4x^2)}=?$

(a) $\frac{1}{8}\log\left|\frac{2-x}{2+x}\right|+C$ (b) $\frac{1}{16}\log\left|\frac{2-x}{2+x}\right|+C$ (c) $\frac{1}{8}\log\left|\frac{2+x}{2-x}\right|+C$ (d) $\frac{1}{16}\log\left|\frac{2+x}{2-x}\right|+C$

21. $\int\frac{x^2}{(1-x^6)}dx=?$

(a) $\frac{1}{6}\log\left|\frac{1+x^3}{1-x^3}\right|+C$ (b) $\frac{1}{6}\log\left|\frac{1-x^3}{1+x^3}\right|+C$ (c) $\frac{1}{3}\log\left|\frac{1-x^3}{1+x^3}\right|+C$ (d) none of these

22. $\int\frac{x}{(1-x^4)}dx=?$

(a) $\frac{1}{4}\log\left|\frac{1+x^2}{1-x^2}\right|+C$ (b) $\frac{1}{4}\log\left|\frac{1-x^2}{1+x^2}\right|+C$ (c) $\frac{1}{2}\log\left|\frac{1+x^2}{1-x^2}\right|+C$ (d) none of these

23. $\int\frac{x^2}{(a^6-x^6)}dx=?$

(a) $\frac{1}{3a^3}\log\left|\frac{a^3+x^3}{a^3-x^3}\right|+C$ (b) $\frac{1}{6a^3}\log\left|\frac{a^3+x^3}{a^3-x^3}\right|+C$ (c) $\frac{1}{6a^3}\log\left|\frac{a^3-x^3}{a^3+x^3}\right|+C$

(d)none of these

24. $\int\frac{dx}{(3-2x-x^2)}=?$

(a) $\frac{1}{4}\log\left|\frac{3+x}{3-x}\right|+C$ (b) $\frac{1}{4}\log\left|\frac{1+x}{1-x}\right|+C$ (c) $\frac{1}{4}\log\left|\frac{3+x}{1-x}\right|+C$ (d) none of these

25. $\int\frac{dx}{(\cos^2 x-3\sin^2 x)}$ =?

(a) $\frac{1}{\sqrt{3}}\log\left|\frac{\sqrt{3}+\tan x}{\sqrt{3}-\tan x}\right|+C$ (b) $\frac{1}{\sqrt{3}}\log\left|\frac{1-\sqrt{3}\tan x}{1+\sqrt{3}\tan x}\right|+C$

(c) $\frac{1}{2\sqrt{3}}\log\left|\frac{1+\sqrt{3}\tan x}{1-\sqrt{3}\tan x}\right|+C$ (d) none of these

26. $\int\frac{\cos ec^2 x}{(1-\cot^2 x)}dx=?$

(a) $\frac{1}{2}\log\left|\frac{1+\cot x}{1-\cot x}\right|+C$ (b) $-\frac{1}{2}\log\left|\frac{1+\cot x}{1-\cot x}\right|+C$ (c) $\frac{1}{2}\log\left|\frac{1-\cot x}{1+\cot x}\right|+C$ (d) none of these

27. $\int\frac{dx}{(4x^2-1)}=?$

(a) $\frac{1}{2}\log\left|\frac{2x-1}{2x+1}\right|+C$ (b) $\frac{1}{2}\log\left|\frac{2x+1}{2x-1}\right|+C$ (c) $\frac{1}{4}\log\left|\frac{2x-1}{2x+1}\right|+C$ (d) none of these

28. $\int\frac{x}{(x^4-16)}dx=?$

(a) $\frac{1}{4}\log\left|\frac{x^2+4}{x^2-4}\right|+C$ (b) $\frac{1}{16}\log\left|\frac{x^2+4}{x^2-4}\right|+C$ (c) $\frac{1}{16}\log\left|\frac{x^2-4}{x^2+4}\right|+C$ (d) none of these

29. $\int\frac{dx}{(\sin^2 x-4\cos^2 x)}=?$

(a) $\frac{1}{4}\log\left|\frac{\tan x-2}{\tan x+2}\right|+C$ (b) $\frac{1}{4}\log\left|\frac{\tan x+2}{\tan x-2}\right|+C$ (c) $\frac{1}{4}\log\left|\frac{1-\tan x}{1+\tan x}\right|+C$

(d) none of these

30. $\int\frac{dx}{(4\sin^2 x+5\cos^2 x)}=?$

(a) $\frac{1}{2}\tan^{-1}\left(\frac{\tan x}{\sqrt{5}}\right)+C$ (b) $\frac{1}{\sqrt{5}}\tan^{-1}\left(\frac{\tan x}{\sqrt{5}}\right)+C$ (c) $\frac{1}{\sqrt[2]{5}}\tan^{-1}\left(\frac{2\tan x}{\sqrt{5}}\right)+C$

(d) none of these

31. $\int\frac{\sin x}{\sin 3x}dx=?$

(a) $\frac{1}{\sqrt[2]{3}}\log\left|\frac{\sqrt{3}+\sin x}{\sqrt{3}-\sin x}\right|+C$ (b) $\frac{1}{\sqrt[2]{3}}\log\left|\frac{\sqrt{3}+\cos x}{\sqrt{3}-\cos x}\right|+C$

(c) $\frac{1}{\sqrt[2]{3}}\log\left|\frac{\sqrt{3}+\tan x}{\sqrt{3}-\tan x}\right|+C$ (d) none of these

32. $\int\frac{(x^2+1)}{(x^4+1)}dx=?$

(a) $\frac{1}{2}\tan^{-1}\left(\frac{x^2+1}{\sqrt{2}x}\right)+C$ (b) $\frac{1}{2}\tan^{-1}\left(\frac{x^2-1}{\sqrt{2}x}\right)+C$

(c) $\frac{1}{\sqrt{2}}\log\left(\frac{x^2+1}{x^2-1}\right)+C$ (d) none of these

ANSWERS: INDEFINITE INTEGRALS-IV

1.(b)	2.(c)	3.(b)	4.(a)	5.(c)	6.(b)
7.(c)	8.(b)	9.(a)	10.(c)	11.(a)	12.(c)
13.(b)	14.(c)	15.(b)	16.(a)	17.(c)	18.(a)
19.(c)	20.(d)	21.(a)	22.(a)	23.(b)	24.(c)
25.(c)	26.(b)	27.(c)	28.(c)	29.(a) n	30.(C)
31.(c)	32.(b)				