



INDIAN SCHOOL AL WADI AL KABIR

Class XII, Mathematics **Worksheet- INTEGRALS**

19-07-2020

OBJECTIVE TYPE (1 Mark)

Q.1.	$\int \frac{x^3 - 1}{x^2} dx$						
A	$\log x^3 - 1 $	B	$\frac{x^2}{2} + \frac{1}{x} + c$	C	$1 + \frac{2}{x^3} + C$	D	$2\log x - x^4 + C$
Q.2.	$\int e^x \left(\frac{1}{x} - \frac{1}{x^2} \right) dx$						
A	$\frac{e^x}{x^2} + C$	B	$-\frac{e^x}{x^2} + C$	C	$\frac{e^x}{x} + C$	D	$\frac{e^x}{x^2} + \frac{1}{x} C$
Q.3.	$\int \sec x dx$						
A	$\log \sec x + \tan x + C$	B	$\log \sec x \tan x + C$	C	$\log \sec x - \tan x + C$	D	$\sec x \tan x + C$
Q.4.	$\int \frac{x^3 - x^2 + x - 1}{x - 1} dx$						
A	$\frac{1}{x - 1} + c$	B	$2x + 1 + C$	C	$\log \left x^2 + \frac{1}{x} \right + C$	D	$\frac{x^3}{3} + x + c$
Q.5.	$\int \sin^{-1}(\cos x) dx$						
A	$\tan x + C$	B	$\frac{\pi}{2}x + \frac{x^2}{2} + C$	C	$\frac{\pi}{2}x - \frac{x^2}{2} + C$	D	<i>none of these</i>
Q6	$\int \left(\frac{x}{x^2 + 1} \right) dx$						
A	$x \tan^{-1} x + C$	B	$2\log x + x + C$	C	$\log x^2 + 1 + C$	D	$\frac{1}{2} \log x^2 + 1 + C$
Q7	$\int \left(\frac{e^x}{(e^{2x} + 1)} \right) dx$						

	A	$\tan^{-1}e^x + C$	B	$e^{2x} + \frac{1}{x} + C$	C	$\tan^{-1}e^{2x} + C$	D	$\log e^{2x} + 1 + C$
Q8	$\int \left(\frac{1}{\sin^2 x \cos^2 x} \right) dx$							
	A	$\sec x - \operatorname{cosec} x + C$	B	$\tan x - \cot x + C$	C	$\tan x + \cot x + C$	D	$\cot x - \tan x + C$
Q9	$\int \left(\sqrt{x} + \frac{1}{\sqrt{x}} \right)^2 dx$							
	A	$\frac{x^2}{2} + \log x + 2x + C$	B	$\frac{\left(\sqrt{x} + \frac{1}{\sqrt{x}} \right)^2}{3} + C$	C	$x + \frac{1}{2\sqrt{x}} + 2\sqrt{x} + C$	D	$\log x + x + x^2 + C$
Q10	$\int \sqrt{1 - \cos x} dx, 0 \leq x \leq \frac{\pi}{2}$							
	A	$\sin \frac{x}{2} - \cos \frac{x}{2} + C$	B	$2\sin \frac{x}{2} + 2\cos \frac{x}{2} + C$	C	$\sin \frac{x}{2} + \cos \frac{x}{2} + C$	D	$\cos \frac{x}{2} - \sin \frac{x}{2} + C$
Q11	$\int \frac{x}{1 + x \tan x} dx$							
	A	$\log \cos x + x \tan x + C$	B	$\log \sin x + x \cos x + C$	C	$\log \cos x + x \sin x + C$	D	$\log 1 + x \tan x + C$
Q12	$\int \frac{1}{(x+1)(x+2)} dx$							
	A	$2\log \left \frac{x+2}{x+1} \right + C$	B	$2\log \left \frac{x+1}{x+2} \right + C$	C	$\log \left \frac{x+2}{x+1} \right + C$	D	$\log \left \frac{x+1}{x+2} \right + C$
Q13	$\int \frac{4x+6}{\sqrt{x^2+3x+9}} dx$							
	A	$2\log x^2+3x+9 + C$	B	$\frac{1}{2}\log x^2+3x+9 + C$	C	$2\sqrt{x^2+3x+9} + C$	D	$4\sqrt{x^2+3x+9} + C$
Q14	$\int \frac{1}{x^2-9} dx$							
	A	$\frac{1}{6}\log \left \frac{x+3}{x-3} \right + C$	B	$\frac{1}{6}\log \left \frac{x-3}{x+3} \right + C$	C	$\log \left \frac{x-3}{x+3} + C \right $	D	$\log \left \frac{x+3}{x-3} \right + C$

Q15	$\int \frac{\sec^2 x}{\operatorname{cosec}^2 x} dx$							
A	$\cot x - x + C$	B	$\tan x + \cot x + C$	C	$\tan x - x + C$	D	$\tan x + C$	
Q16	$\int \frac{1 - \cos x}{1 + \cos x} dx$							
A	$2 \tan \frac{x}{2} - x + c$	B	$2 \tan \frac{x}{2} + x + c$	C	$x - 2 \tan \frac{x}{2} + c$	D	$\frac{1}{2} \tan \frac{x}{2} - x + c$	
Q17	$\int e^x \sin x dx$							
A	$\frac{e^x}{2} (\sin x - \cos x) + C$	B	$\frac{e^x}{2} (\sin x + \cos x) + C$	C	$\frac{e^x}{2} (\cos x - \sin x) + C$	D	$e^x (\sin x - \cos x) + C$	
Q18	$\int x^2 e^{x^3} dx$							
A	$x^3 + \frac{e^{x^3}}{3} + C$	B	$\frac{e^{x^2}}{2} + C$	C	$\frac{e^{x^2}}{3} + C$	D	$\frac{e^{x^3}}{3} + C$	
Q19	$\int \frac{x e^x}{(1+x)^2} dx$							
A	$e^x (1+x) + C$	B	$\frac{e^x}{(1+x)} + C$	C	$\frac{e^x}{(1+x)^2} + C$	D	$e^x (1+x)^2 + C$	
Q20	$\int \frac{1}{\sqrt{16-6x-x^2}} dx$							
A	$\frac{1}{6} \log \left \frac{x-3}{5} \right + c$	B	$\frac{1}{6} \log \left \frac{x+3}{5} \right + c$	C	$\sin^{-1} \left(\frac{x+3}{5} \right) + C$	D	$\log \left \frac{x+3}{5} \right + \sqrt{16-6x-x^2} + c$	

ANSWERS

1	B	2	C	3	A	4	D
5	C	6	D	7	A	8	B
9	A	10	B	11	C	12	D
13	D	14	B	15	C	16	A
17	A	18	D	19	B	20	C