INTEGRALS

INTRODUCTION & INTEGRATION AS AN INVERSE PROCESS OF DIFFERENTIATION

EXERCISE

Q.1 Solve the integral value $8x^3 + 1$

(A) $2x^4 + x + C$ (B) $2x^6 - 5x + C$

(C) $2x^4 - x + C$ (D) $2x^4 + x^2C$

Q.2 Determine $\int 7x^2 - x^3 + 2x dx$.

(A) $\frac{7x^3}{3} + \frac{x^4}{5} - \frac{2x^2}{2} + c$ (B) $\frac{7x^3}{3} + \frac{x^4}{4} + \frac{2x^2}{2} + c$

(C) $\frac{7x^5}{9} - \frac{x^4}{4} + \frac{2x^2}{2} + c$ (D) $\frac{7x^5}{3} - \frac{x^4}{4} + x^2 + c$

Q.3 Find the integral of 2 sin2x+3.

(A) sin 2x +3x+C (B) -cos2x-3x^3+C

(C) -cos2x+3x+C (D) cos2x-3x+12+C

Q.4 Solve the integral of $\int 3e^x + \frac{2}{x} + x^3 dx$.

(A) $3e^3x + \frac{2}{x} - \frac{x^4}{4} + c$ (B) $3e^x + 2\log x + \frac{x^4}{4} + c$

(C) $e^x + 2\log x + \frac{x^4}{4} + c$ (D) $3e^x - \frac{2}{x^2} + \frac{x^4}{4} + c$

Q.5 Determine the integral of $\frac{4x^4 - 3x^2}{x^3}$.

(A) $7x^2 - 3 \log x^3 + C$ (B) $2x^2 - 3 \log x + C$

(C) $x^2 - \log x + C$ (D) $2x^2 + 3 \log x + C$

Q. 6 Evaluate $\int 3\cos x + \frac{1}{x} dx$.

(A) $3\sin x - \frac{1}{x} + c$ (B) $2\sin x + \frac{1}{x^3} + c$

(C) $3\sin 3x + \frac{1}{x} + c$ (D) $\sin x - \frac{1}{x^2} + c$

Q.7 Solve. $\int (2+x)x\sqrt{x} dx$

(A) $\frac{4x^{\frac{5}{2}}}{5} + \frac{2x^{\frac{7}{2}}}{9} + c$ (B) $\frac{4x^{\frac{5}{2}}}{5} - \frac{2x^{\frac{7}{2}}}{7} + c$

(C) $\frac{4x^{\frac{5}{2}}}{6} + \frac{2x^{\frac{7}{2}}}{7} + c$ (D) $-\frac{4x^{\frac{5}{2}}}{5} + \frac{2x^{\frac{7}{2}}}{7} + c$

Q.8 Find. $\int 7x^8 - 4e^{2x} - \frac{2}{x^2} dx$

(A) $\frac{7x^9}{9} - 2e^{2x} + \frac{2}{x} + c$ (B) $\frac{7x^9}{9} + 2e^{2x} + \frac{2}{x} + c$

(C) $\frac{7x^9}{9} - 2e^{2x} + \frac{2}{x^2} + c$ (D) $\frac{7x^9}{9} + 2e^{2x} - \frac{4}{x} + c$

Q.9 Determine the integral $\int \sin 2x + e^3 x - \cos 3x dx$

(A) $-\frac{\sin 2x}{2} + \frac{e^{3z}}{3} - \frac{\sin 3x}{3} + c$ (B) $-\frac{\cos 2x}{2} + \frac{e^{3x}}{3} - \frac{\sin 3x}{3} + c$

(C) $-\frac{\cos 2x}{2} + \frac{e^{3x}}{3} - \frac{\cos 3x}{3} + c$ (D) $-\frac{\cos 2x}{2} - \frac{e^{3z}}{3} - \frac{\cos 3x}{3} + c$

Q.10 Determine the integral $(ax^2 + b)^2$.

(A) $\frac{a^2x^5}{5} + b^2x + \frac{2abx^2}{3} + c$ (B) $-\frac{a^2x^5}{5} - b^2x + \frac{2abx^3}{3} + c$

(C) $\frac{b^2x^5}{5} + b^2x + \frac{27x^3}{3} + c$ (D) $\frac{a^2x^5}{5} + x + \frac{2abx^3}{5} + c$

ANSWER KEY

1. (A)
2. (D)
3. (C)
4. (B)
5. (B)
6. (A)
7. (C)
8. (A)
9. (B)
10. (A)