CEM – Yr 12 – Primitive Functions, Definite and Indefinite Integrals – MC – Paper 2

1) Find the primitive function of $(5x-2)^3$

    a) $3(5x-2)^2+c$ b) $\dfrac{(5x-2)^4}{20}+c$

    c) $\dfrac{3(5x-2)^2}{15}+c$ d) $\dfrac{(5x-2)^4}{4}+c$

2) Find the primitive function of $\dfrac{1}{\sqrt{3x+2}}$

    a) $\dfrac{\sqrt{3x+2}}{2}+c$ b) $\dfrac{(3x+2)^2}{\sqrt{3x+2}}+c$

    c) $\dfrac{9}{2\sqrt{3x+2}}+c$ d) $\dfrac{2\sqrt{3x+2}}{3}+c$

3) Evaluate the indefinite integral $\int (3-2x)^6\,dx$

    a) $6(3-2x)^5+c$ b) $\dfrac{(3-2x)^7}{7}+c$

    c) $-3(3-2x)^7+c$ d) $\dfrac{-(3-2x)^7}{14}+c$

4) Evaluate the indefinite integral $\int 2x\sqrt{x}\,dx$

    a) $\dfrac{4x^{\frac{5}{2}}}{5}$ b) $\dfrac{4x^{\frac{3}{2}}}{3}$

    c) $8x^{\frac{5}{2}}$ d) $\dfrac{2x^{\frac{5}{2}}}{5}$

5) Evaluate the indefinite integral $\int \dfrac{6x^2 - 3x}{x^4}dx$

a) $12x + \dfrac{3}{4x} + c$

b) $\dfrac{-6}{x} + \dfrac{3x}{2} + c$

c) $\dfrac{-6}{x} + \dfrac{3}{2x^2} + c$

d) $\dfrac{-12}{x} + \dfrac{1}{2x^2} + c$

6) Evaluate the indefinite integral $\int (x^2 + 4)^2 dx$

a) $4x^3 + 16x + c$

b) $\dfrac{x^5}{5} + \dfrac{16x^3}{3} + 16x + c$

b) $5x^4 + \dfrac{8x^3}{3} + 16x + c$

d) $\dfrac{x^5}{5} + \dfrac{8x^3}{3} + 16x + c$

7) Evaluate the integral $\int_1^5 \dfrac{7}{x^2}dx$

a) $8\dfrac{2}{5}$

b) $2\dfrac{1}{3}$

c) $5\dfrac{3}{5}$

d) $7\dfrac{1}{5}$

8) Evaluate the integral $\int_1^4 \dfrac{dx}{2\sqrt{x}}$

a) 2

b) 1

c) $2\dfrac{1}{4}$

d) $\dfrac{3}{4}$

9) Evaluate the integral $\int_1^3 3x(4 - x)dx$

a) 32

b) 22

c) 18

d) 27

10) Evaluate the indefinite integral $\int \dfrac{x^2 - 2}{\sqrt{x}} dx$

a) $\dfrac{2x^{\frac{5}{2}}}{5} - 4\sqrt{x} + c$

b) $\dfrac{5x^{\frac{3}{2}}}{2} + 4\sqrt{x} + c$

c) $\dfrac{2x^{\frac{3}{2}}}{3} - \dfrac{4x^2}{3} + c$

d) $\dfrac{2x^{\frac{2}{5}}}{5} + 2\sqrt{x} + c$

Answers

1. b)
2. d)
3. d)
4. a)
5. c)
6. d)
7. c)
8. b)
9. b)
10. a)