

$$A) \int 2x^2 - \sqrt{3x^2 + 4x} dx$$

$$\int 2x^2 dx - \int \sqrt{3x^2 + 4x} dx$$

$$= \frac{2x^3}{3} - \frac{2}{3} \sqrt{3x^2 + 4x} + 2x^2 + C$$

$$B) \int 4x^3 + 2x^{1/2} + 5x^{3/4} - 7x^2 dx$$

$$\int 4x^3 + 2x^{1/2} + 5x^{3/4} - 7x^2 dx$$

$$= \int 4x^3 dx + \int 2x^{1/2} dx + \int 5x^{3/4} dx - \int 7x^2 dx$$

$$\int 4x^3 dx = x^4 \quad \int 2x^{1/2} dx = \frac{4}{3} x^{3/2} \quad \int 5x^{3/4} dx = 5 \cdot \frac{4}{7} x^{7/4} \quad \int 7x^2 dx = \frac{7x^3}{3}$$

$$C) \int \sqrt{3x^4} dx$$

$$\int 3x^{4/5 + 5/5} dx$$

$$= \frac{3x^{9/5}}{9/5} = \frac{5x^{9/5}}{3} = \frac{5}{3} \sqrt[5]{5x^9} + C$$

$$D) \int 8x^2 - \sqrt[4]{6x} dx$$

$$\int 8x^2 dx - \int \sqrt[4]{6x} dx$$

$$= \frac{8x^3}{3} - \frac{4}{5} \sqrt[5]{24x^5} + C$$

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Fecha

20/06/2022

Biomatemáticas I

$$R) \int (8x^4 + 4x^3 - 6x^2 - 8) dx$$

$$\frac{8x^5}{5} + x^4 - 2x^3 - 8x + C$$

$$S) \int (2 + 3x^2 - 8x^3) dx$$

$$2x + x^3 - 2x^4 + C$$

$$T) \int \sqrt[3]{x}(x+1) dx = x^{1/3} (x+1) = x^{4/3} + x^{1/3}$$

$$\frac{3x^{7/3}}{7} + \frac{3x^{4/3}}{4} + C$$

$$U) \int (ax^2 + bx + c) dx$$

$$\frac{ax^3}{3} + \frac{bx^2}{2} + cx + C$$

$$V) \int (\sqrt{x} - \frac{1}{\sqrt{x}}) dx$$

$$\frac{2}{3} x^{3/2} - 2x^{1/2} + C$$

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 $\frac{3x^{7/3}}{3}$

$$K) \int 7x^3 \sqrt{x} dx = \int 7x^3 \cdot x^{1/2} dx = 7 \int x^{7/2} dx$$

$$7 \cdot \frac{2}{9} x^{9/2} = 7 \cdot \frac{2}{9} x^{4.5} \Rightarrow \frac{14}{9} x^{4.5} + C$$

$$L) \int 4x^3 + x^2 dx = \int 4x^3 dx + \int x^2 dx$$

$$\int 4x^3 dx = x^4 \quad \int x^2 dx = \frac{x^3}{3} = x^4 + \frac{x^3}{3} + C$$

$$H) \int 3u^5 - 2u^3 du = \int 3u^5 du - \int 2u^3 du$$

$$\int 3u^5 du = u^6 \quad \int 2u^3 du = \frac{u^4}{2} = \frac{u^6}{2} - \frac{u^4}{2} + C$$

$$N) \int v^3 (2v^2 - v) dv = \int (2v^5 - v^4) dv = 2 \int v^5 dv - \int v^4 dv$$

$$\int 2v^5 dv = \frac{2v^6}{6} \quad \int v^4 dv = \frac{v^5}{5} = \frac{2v^6}{6} - \frac{v^5}{5} + C$$

$$O) \int x^4 (5 - x^2) dx = \int (5x^4 - x^6) dx = \int 5x^4 dx - \int x^6 dx$$

$$\int 5x^4 dx = x^5 \quad \int x^6 dx = \frac{x^7}{7} = x^5 - \frac{x^7}{7} + C$$

$$P) \int (3 - 2t + t^2) dt = \int 3 dt - \int 2t dt + \int t^2 dt$$

$$= 3t - t^2 + \frac{t^3}{3} = 3t - t^2 + \frac{t^3}{3} + C$$

$$Q) \int \sqrt{x} (x+1) dx = \int x^{1/2} (x+1) dx = \int x^{3/2} dx + \int x^{1/2} dx$$

$$\int x^{3/2} dx = \frac{2}{5} x^{5/2} \quad \int x^{1/2} dx = \frac{2}{3} x^{3/2} = \frac{2}{5} x^{5/2} + \frac{2}{3} x^{3/2} + C$$

$$1) \int \frac{2}{3\sqrt{x}} dx \quad 2) \int x^{1/3} dx \Rightarrow (2) \frac{x^{-1/3+5/3}}{-1/3+3/3} = \frac{2x^{2/3}}{2/3} = \frac{6x^{2/3}}{2} = 3x^{2/3} + C$$

$$J) \int 6t^2 \sqrt[3]{t} dt \Rightarrow \int 6t^2 t^{1/3} dt \quad \int 6t^{7/3} dt$$

$$6 \cdot \frac{t^{7/3+3/3}}{-7/3+3/3} = 6 \cdot \frac{t^{10/3}}{10/3} = \frac{18t^{10/3}}{10} = \frac{9}{5}t^{10/3} + C$$

K) $\int \frac{2}{x^2} dx$

L) $\int 4x^3 dx$

$$A) \int 3x^4 dx = \frac{3x^{4+1}}{4+1} = \frac{3x^5}{5} + C$$

$$B) \int 2x^7 dx = \frac{2x^{7+1}}{7+1} = \frac{2x^8}{8} = \frac{x^8}{4} + C$$

$$C) \int \frac{1}{x^3} dx = \int x^{-3} dx = \frac{x^{-3+1}}{-3+1} = \frac{x^{-2}}{-2} = -\frac{1}{2x^2} + C$$

$$D) \int \frac{1}{x^5} dx = \int x^{-5} dx = \frac{x^{-5+1}}{-5+1} = \frac{x^{-4}}{-4} = -\frac{1}{4x^4} + C$$

$$E) \int \frac{3}{5} x^6 dx = \frac{3}{5} \int x^6 dx = \frac{3}{5} \cdot \frac{x^{6+1}}{6+1} = \frac{3x^7}{5 \cdot 7} = \frac{3x^7}{35} + C$$

$$F) \int \frac{3}{t^5} dt = 3 \int t^{-5} dt = 3 \cdot \frac{t^{-5+1}}{-5+1} = 3 \frac{t^{-4}}{-4} = -\frac{3}{4t^4} + C$$

$$G) \int 5u^{3/2} du = 5 \int u^{3/2} du = \frac{5u^{3/2+2/2}}{3/2+2/2} = \frac{5 \cdot 4^{5/2}}{5/2} = \frac{10 \cdot 4^{5/2}}{5} = 2 \cdot 4^{5/2} + C$$

$$H) \int 10 \sqrt[3]{x^2} dx = \int 10 x^{2/3} dx = (10) \frac{x^{2/3+3/3}}{2/3+3/3} = (10) \frac{x^{5/3}}{5/3} = \frac{30x^{5/3}}{5} + C$$