

Binomio al cuadrado

$$\int (3x+4)^2 dx$$

$$(3x+4)(3x+4)$$

$$\frac{9x^2 + 12x + 2x + 16}{9x^2 + 24x + 16}$$

$$\int (9x^2 + 24x + 16) dx$$

$$\int 9x^2 dx + \int 24x dx + \int 16 dx$$

$$9 \int x^2 dx + 24 \int x dx + 16 \int dx$$

$$\frac{9x^3}{3} + 24 \frac{x^2}{2} + 16x + C$$

$$3x^3 + 12x^2 + 16x + C$$

$$\int \frac{dx}{x^3} \int \frac{dx}{(x-1)^3}$$

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

$$* \int \frac{dx}{x+3}$$

$$\int \sqrt{3x-1} dx$$

$$\int \frac{dx}{(x-1)^3}$$

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

$$\int (x-1)^{-3} dx = \int (x-1)^{-2} dx$$

$$= \frac{1}{-2} (x-1)^{-2} + C$$

$$= -\frac{1}{2} + \frac{2}{2} = \frac{1}{2}$$

$$= 2(x+3)^{1/2} + C$$

$$= 2\sqrt{x+3} + C$$

$$\int \sqrt{2-3x} dx \quad (1)$$

$$\int \sqrt{2-3x} dx$$

$$\int (2-3x)^{1/2} dx =$$

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

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

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

(2)

$$\int (x^2-1) x dx = \int (x^3-x) dx = \int x^3 dx - \int x dx =$$

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

$$\int (2x+3)^{4/3} dx \quad (2)$$

$$\frac{1}{3} + \frac{3}{3} = \frac{4}{3} =$$

$$\frac{2x+3}{\frac{4}{3}} = \frac{3}{4} (2x+3)^{4/3}$$

$$= \frac{4}{3} \sqrt[3]{(2x+3)^4} + C$$

(3)

$$\int (x-1)^2$$

$$(x-1)(x-1) =$$

$$\frac{x^2 - x - x + 1}{x^2 - 2x + 1}$$

$$\int (x^2 - 2x + 1) dx =$$

$$\int x^2 dx - 2 \int x dx + \int 1 dx =$$

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

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

$$\int x + 5x^2 - 4 dx =$$

$$\int \left(\frac{x^3}{3} + \frac{5x^2}{x^3} - \frac{4}{x^2} \right) dx$$

$$\int dx + \int \frac{5}{x} dx - \int \frac{4}{x^2} dx =$$

$$\int dx + 5 \int \frac{dx}{x} - 4 \int \frac{dx}{x^2}$$

$$x + 5 \ln|x| - \frac{4x^{-2}}{-2} + C$$

$$+ 2x^{-2} + C$$

$$x + 5 \ln|x| + x^2 + C$$

$$\int (2-3x^4 x^2) dx$$

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

$$\int (1-x) \cdot x^{1/2} dx$$

$$\int [x^{1/2} - x^{3/2}] dx$$

$$\int x^{1/2} dx - \int x^{3/2} dx$$

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

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