

Evaluate the following indefinite integrals.

$$\int e^x dx \quad \int x^2 + \cos x dx \quad \int 5x^7 - 3x^3 + 2x^{3/2} dx$$
$$\int 3 \sin x + 2x^4 + \frac{4}{x^2} dx \quad \int \sec x \tan x - \frac{3}{x} dx \quad \int e^{3x} dx$$

Find values of the constant(s) A (or A and B) such that F is an anti-derivative of f .

$$f(x) = x^2 e^{4x^3}, \quad F(x) = Ae^{4x^3}$$
$$f(x) = e^x \cos x, \quad F(x) = Ae^x \cos x + Be^x \sin x$$

Evaluate the following indefinite integrals.

$$\int xe^{x^2} dx \quad \int (3x^4 + x)^5(12x^3 + 1) dx \quad \int \frac{x^2}{x^3 + 5} dx$$
$$\int e^x \sin(e^x), dx \quad \int x^2 e^{x^3} \cos(e^{x^3}) dx \quad \int \frac{x^3}{x^2 - 1} dx$$