

1. Calcule as integrais indefinidas abaixo.

Para verificar lembre que $\int f(x)dx = F(x) \iff F'(x) = f(x), \forall x \in D_f$.

(1) $\int x e^x dx$

(2) $\int x \operatorname{sen} x dx$

(3) $\int x \ln x dx$

(4) $\int \ln x dx$

(5) $\int x \sec^2 x dx$

(6) $\int x^4 \ln x dx$

(7) $\int x^3 e^{x^2} dx$

(8) $\int x^3 \cos x^2 dx$

(9) $\int x^2 \operatorname{sen} x dx$

(10) $\int x e^{3x} dx$

(11) $\int x \ln^2 x dx$

(12) $\int \ln^2 x dx$

(13) $\int e^x \cos x dx$

(14) $\int x^2 e^x dx$

(15) $\int \sec x dx$

(16) $\int \sec^2 x dx$

(17) $\int \sec^3 x dx$

(18) $\int \sec^4 x dx$

(19) $\int \sqrt{1-x^2} dx$

(20) $\int x \sqrt{1-x^2} dx$

(21) $\int \sqrt{1-4x^2} dx$

(22) $\int \sqrt{9-4x^2} dx$

(23) $\int \frac{1}{\sqrt{1-x^2}} dx$

(24) $\int \frac{x}{\sqrt{1-x^2}} dx$

(25) $\int \frac{1}{\sqrt{4-x^2}} dx$

(26) $\int \frac{x^2}{\sqrt{1-x^2}} dx$

(27) $\int \frac{1}{x \sqrt{1+x^2}} dx$

(28) $\int \sqrt{-x^2+2x+2} dx$

(29) $\int x^2(x+1)^{12} dx$

(30) $\int x^2 \sqrt{x-1} dx$

(31) $\int x^2 \sqrt{1-x^2} dx$

(32) $\int \frac{1}{1+\sqrt{x}} dx$

(33) $\int \sqrt{1+e^x} dx$

(34) $\int \frac{x}{\sqrt{2-3x^2}} dx$

(35) $\int \sqrt{1+\sqrt{x}} dx$

(36) $\int \operatorname{arctg} \sqrt{x} dx$

2. Calcule as seguintes integrais indefinidas:

$$(1) \int \cos x \, dx$$

$$(2) \int \cos 2x \, dx$$

$$(3) \int \cos 7x \, dx$$

$$(4) \int \cos^2 x \, \operatorname{sen} x \, dx$$

$$(5) \int \cos^2 x \, dx$$

$$(6) \int \operatorname{sen}^2 x \, dx$$

$$(7) \int \cos^3 x \, dx$$

$$(8) \int \operatorname{sen}^3 x \, dx$$

$$(9) \int e^{2x} \, dx$$

$$(10) \int (3x - 2)^4 \, dx$$

$$(11) \int \sqrt{3x - 2} \, dx$$

$$(12) \int \frac{1}{3x - 2} \, dx$$

$$(13) \int \frac{1}{(3x - 2)^4} \, dx$$

$$(14) \int \frac{5}{4x + 3} \, dx$$

$$(15) \int \frac{x}{4x^2 + 3} \, dx$$

$$(16) \int x\sqrt{1 + 7x^2} \, dx$$

$$(17) \int \frac{\operatorname{sen} x}{\cos^2 x} \, dx$$

$$(18) \int xe^{-x^2} \, dx$$

$$(19) \int e^x \sqrt{1 + 4e^x} \, dx$$

$$(20) \int \frac{x}{(4x^2 + 3)^5} \, dx$$

$$(21) \int \operatorname{sen} x \sqrt{\cos x} \, dx$$

$$(22) \int \frac{1}{1 + x^2} \, dx$$

$$(23) \int \frac{x}{1 + x^2} \, dx$$

$$(24) \int \frac{x + 1}{x^2 + 1} \, dx$$

$$(25) \int \frac{1}{1 + 4x^2} \, dx$$

$$(26) \int \frac{1}{9 + 4x^2} \, dx$$

$$(27) \int \frac{2x}{9 + 4x^2} \, dx$$

$$(28) \int \frac{1}{1 + (x + 3)^2} \, dx$$

$$(29) \int \frac{1}{9 + 4(x + 3)^2} \, dx$$

$$(30) \int \frac{1}{x^2 + 4x + 5} \, dx$$

$$(31) \int \frac{x + 2}{x^2 + 4x + 5} \, dx$$

$$(32) \int \frac{x}{1 + (x + 3)} \, dx$$

$$(33) \int \frac{x - 1}{4 + x^2} \, dx$$

$$(34) \int \operatorname{tg} x \, dx$$

$$(35) \int \operatorname{tg} x \, \sec^2 x \, dx$$

$$(36) \int \frac{\sec^2 x}{3 + 2 \operatorname{tg} x} \, dx$$

$$(37) \int \operatorname{sen} x \, \sec^3 x \, dx$$

$$(38) \int \operatorname{sen} 2x \sqrt{5 + \operatorname{sen}^2 x} \, dx$$

$$(39) \int x \cos x^2 \, dx$$

$$(40) \int \frac{x}{1 + x^4} \, dx$$

$$(41) \int \operatorname{tg}^5 x \, \sec^2 x \, dx$$

$$(42) \int \operatorname{tg}^3 x \, dx$$