

NEDOLOČENI INTEGRAL

1. Izračunaj naslednje nedoločene integrale:

(a) $\int \left(\frac{x^2}{2} + \frac{x^7}{6} + \frac{1}{\sqrt[5]{x^{12}}} - x^{-7} + x^{-\pi} \right) dx,$

(b) $\int \left(\cos x - \frac{1}{\sin^2 x} + \frac{4}{1+x^2} - \frac{2}{\sqrt{1+x^2}} \right) dx,$

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

(d) $\int a^{2x+7} dx.$

2. Izračunaj naslednje nedoločene integrale:

(a) $\int (x+1)^7 dx,$

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

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

(d) $\int \operatorname{tg}(2x) dx,$

(e) $\int \frac{dx}{x \ln^5 x},$

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

(g) $\int x \sin x^2 dx,$

(h) $\int \frac{\operatorname{arctg} x}{1+x^2} dx.$

3. Izračunaj naslednje nedoločene integrale:

(a) $\int x^5 \ln x dx,$

(b) $\int x \sin 2x dx,$

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

(d) $\int x \sin(2x-1) dx,$

(e) $\int (2x+3) \cos x dx,$

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

(g) $\int x^3 \ln^3 x dx,$

(h) $\int x \ln(x^2+1) dx,$

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

(j) $\int (2x+3) e^x dx,$

(k) $\int (2x^2 - 7x + 1) e^x dx,$

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

(m) $\int e^x \cos(2x) dx,$

(n) $\int e^{-x} \sin x dx,$

(o) $\int e^{2x} (\cos 2x - 2 \sin x) dx,$

(p) $\int x \arcsin x dx.$

4. Izračunaj naslednje nedoločene integrale:

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

- (b) $\int \frac{1}{x^3-5x^2+6x} dx,$
- (c) $\int \frac{2x-1}{x^2-3x+2} dx,$
- (d) $\int \frac{2x+3}{(x-1)(x+1)^2} dx,$
- (e) $\int \frac{4x^3-1}{x^2-1} dx,$
- (f) $\int \frac{3x^3+x}{x^2+1} dx,$
- (g) $\int \frac{1}{(x^2+1)(x+1)} dx,$
- (h) $\int \frac{2x-1}{(x-2)^2(x+1)^2} dx,$
- (i) $\int \frac{x^2-2x+2}{x(x^2+1)} dx.$

5. Izračunaj naslednje nedoločene integrale:

- (a) $\int \cos^5 x \sin x dx,$
- (b) $\int \cos^2 x \sin^4 x dx,$
- (c) $\int \cos^4 x \sin^2 x dx,$
- (d) $\int \cos^{2013} x dx,$
- (e) $\int \sin^2 x \cos^5 x dx,$
- (f) $\int \sin^3 x \cos^5 x dx,$
- (g) $\int \sin^4 x dx,$
- (h) $\int \cos^8 x dx.$

6. Izračunaj naslednje nedoločene integrale:

- (a) $\int \frac{1-\sin x+\cos x}{1+\sin x-\cos x} dx$
- (b) $\int \frac{\cos x+\sin x}{1+\sin x-\cos x} dx$
- (c) $\int \frac{dx}{8-4 \sin x+7 \cos x} dx$
- (d) $\int \frac{\cos x}{\sin^2 x-6 \sin x+5} dx$
- (e) $\int \frac{dx}{\sqrt{\sin x \cos^3 x}}$ (Namig: $t = \operatorname{tg} x$)

7. Izračunaj naslednje nedoločene integrale:

- (a) $\int \frac{dx}{\sqrt{8x-16x^2}},$
- (b) $\int \frac{dx}{x^2+4x+7},$
- (c) $\int \frac{dx}{\sqrt{x^2+x+1}},$
- (d) $\int \frac{dx}{x^2+y^2}.$