

ZESTAW ZADAŃ XI

Zadanie 1 Oblicz całki nieoznaczone:

- (a) $\int (4x^2 - 3x + 5)dx$, (b) $\int \left(\frac{1}{x^2} - \frac{2}{x^3} + \frac{3}{x^4} - \frac{5}{x^5}\right) dx$, (c) $\int \left(3\sqrt[3]{x} - \frac{2}{\sqrt[3]{x}}\right) dx$,
(d) $\int (2 \sin x + 3 \cos x) dx$, (e) $\int \left(\frac{2}{\cos^2 x} - \frac{5}{\sin^2 x}\right) dx$, (f) $\int \left(\frac{3}{\sqrt{1-x^2}} - \frac{4}{x^2+1}\right) dx$,
(g) $\int \left(3e^x - \frac{5}{x}\right) dx$, (h) $\int \cos(3x)dx$, (i) $\int e^{2x} \cos(3x)dx$.

Zadanie 2 Oblicz całki nieoznaczone stosując podane podstawienia:

- (a) $\int e^{2x} dx$, $u = 2x$, (b) $\int \frac{e^x dx}{(3e^x - 2)^5}$, $u = 3e^x - 2$, (c) $\int x^3(x^4 + 1)^{99} dx$, $u = x^4 + 1$,
(d) $\int \frac{\cos x dx}{\sin^3 x}$, $u = \sin x$, (e) $\int x^2 \sqrt{2x+1} dx$, $u = 2x + 1$.

Zadanie 3 Oblicz całki nieoznaczone przez podstawienie:

- (a) $\int e^{-3x} dx$, (b) $\int \frac{dx}{\sin^2(1-3x)}$, (c) $\int \sqrt{3x+4} dx$, (d) $\int x(3x^2 + 1)^5 dx$, (e) $\int x^2 \sin(1 - x^3) dx$, (f) $\int \frac{dx}{x \ln^2 x}$,
(g) $\int \frac{\sqrt{3-5 \operatorname{tg} x} dx}{\cos^2 x}$, (h) $\int \frac{\cos x dx}{1+\sin^2 x}$, (i) $\int \sin^3 x dx$, (j) $\int \frac{e^{\frac{1}{x}} dx}{x^2}$, (k) $\int \frac{e^x dx}{\sqrt{1-e^{2x}}}$, (l) $\int \cos^2 x dx$, (m) $\int \frac{\arcsin^3 x dx}{\sqrt{1-x^2}}$,
(n) $\int (x+2)\sqrt{3x+2} dx$, (o) $\int \left(\sqrt[3]{x+2} - \sqrt{x+2}\right) dx$, (p) $\int \frac{x^2 dx}{x^6+1}$, (q) $\int \frac{dx}{\sqrt{x}(2-3\sqrt{x})}$, (r) $\int \sqrt{4-x^2} dx$.