

Zadanie 1

Oblicz całkę

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|---|---|--|
| (a) $\int x(x-1)(x-2)dx$ | (b) $\int (x^2 - x + 1)^2 dx$ | (c) $\int (x^2 + a^2)x dx$ |
| (d) $\int \frac{x(\sqrt{x} - x^2\sqrt[3]{x})dx}{\sqrt[4]{x}}$ | (e) $\int \frac{(\sqrt{x} - \sqrt[3]{x})dx}{x^2}$ | (f) $\int \frac{xdx}{(x^2 + a^2)^n}, a \neq 0$ |
| (g) $\int \frac{dx}{\sqrt{2x-3}}$ | (h) $\int x^2\sqrt{2x^3-3}dx$ | (i) $\int xe^{x^2} dx$ |
| (j) $\int \sin x \cos x dx$ | (k) $\int \frac{\ln x dx}{x}$ | (l) $\int \frac{xdx}{\sqrt{1-x^4}}$ |
| (m) $\int xe^x dx$ | (n) $\int x \sin x dx$ | (o) $\int e^x \sin x dx$ |
| (p) $\int \ln x dx$ | (r) $\int x^{10} \ln x dx$ | (s) $\int (\ln x)^2 dx$ |
| (t) $\int \arctg x dx$ | | |

Zadanie 2

Oblicz całkę

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|---|----------------------------------|--|
| (a) $\int \frac{(x^2 - \sqrt{x})dx}{\sqrt[3]{x}}$ | (b) $\int \sqrt[4]{3^x} dx$ | (c) $\int \text{ctg}^2 x dx$ |
| (d) $\int \frac{(e^{3x} - 1)dx}{e^x - 1}$ | (e) $\int \sin^2 \frac{x}{2} dx$ | (f) $\int \sqrt{x\sqrt{x\sqrt{x}}} dx$ |

Zadanie 3

Oblicz całkę. Skorzystaj z twierdzenia o całkowaniu przez części.

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|----------------------------|---------------------------------|---------------------------------|
| (a) $\int x^2 \arctg x dx$ | (b) $\int \arcsin x dx$ | (c) $\int x \sin x \cos x dx$ |
| (d) $\int x \ln^2 x dx$ | (e) $\int \frac{\ln x dx}{x^2}$ | (f) $\int \frac{xdx}{\sin^2 x}$ |
| (g) $\int e^x \cos x dx$ | | |

Zadanie 4

Oblicz całkę. Zastosuj odpowiednie podstawienie.

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| (a) $\int \frac{e^{3x} dx}{1 + e^{6x}}$ | (b) $\int x\sqrt{x-3} dx$ | (c) $\int \frac{x^3 dx}{\sqrt{(1-x^2)^3}}$ |
| (d) $\int \frac{\cos \ln x dx}{x}$ | (e) $\int x\sqrt{x^2+1} dx$ | (f) $\int \frac{\sin x dx}{3 + 2\cos x}$ |
| (g) $\int \frac{e^{-4x} dx}{\sqrt{4 + e^{-4x}}}$ | (h) $\int \frac{dx}{x\sqrt{x^2-2}}$ | (i) $\int \frac{x^3 dx}{\sqrt{1-x^8}}$ |
