

Analiza II (TKN) – 22/24.2.2017. Zadaci za samostalan rad uz vježbe br. 1 i 2

[Z1] Izračunati integrale:

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

b) $\int \frac{x^2+2}{x^2+1} dx$

c) $\int \frac{2^{x+1}-5^{x-1}}{10^x} dx$

d) $\int \left(1 - \frac{1}{x^2}\right) \sqrt{x} \sqrt{x} dx$

e) $\int \operatorname{cth}^2 x dx$

[Z2] Izračunati integrale:

a) $\int \sqrt[5]{1-x} dx$

b) $\int \frac{dx}{\sqrt{x-1}-\sqrt{x-2}}$

c) $\int \frac{dx}{2+3x^2}$

d) $\int \frac{dx}{2-3x^2}$

e) $\int \frac{dx}{\sqrt{x^2+7}}$

f) $\int \frac{dx}{1+\cos x}$

[Z3] Izračunati integrale:

a) $\int \frac{2x+3}{x^2+3x-10} dx$

b) $\int \frac{x^2 dx}{(8x^3+27)^{\frac{2}{3}}}$

c) $\int \frac{e^{\frac{1}{x}}}{x^2} dx$

d) $\int \frac{\ln x}{x} dx$

e) $\int \frac{1}{1-x^2} \ln \frac{1+x}{1-x} dx$

f) $\int \frac{\cos^3 x}{\sin x} dx$

g) $\int \frac{dx}{\sin x}$

[Z4] Izračunati integrale:

a) $\int \frac{dx}{1+e^x}$

b) $\int \frac{x^2}{(1-x)^{100}} dx$

c) $\int \sin \frac{x}{2} \cos \frac{x}{12} dx$

d) $\int \sin^4 x \cos^4 x dx$

[Z5] Primjenom metode parcijalne integracije izračunati integrale:

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

b) $\int e^{\sqrt{x}} dx$

c) $\int e^{ax} \sin^2 x dx$

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

[Z6] Izračunati integral:

$$\int \frac{dx}{x \ln x \cdot \ln(\ln x)}$$