Teleinformatyka, rok I

8 ZESTAW ZADAŃ Z ANALIZY

1. Oblicz całki:

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

$$\int xe^x dx,\ \int \frac{dx}{\sqrt{3x-4}},\ \int \sin x\cos x dx,\ \int \frac{x}{(x^2+a^2)^n}dx,$$

$$\int e^x\cos x dx,\ \int \cos x e^{\sin x}dx,\ \int x\ln(1+x^2)dx,\ \int \frac{\sqrt{x}+\sqrt[3]{x}}{x}dx,\ \int \frac{dx}{x^2-4}dx,$$

$$\int \frac{dx}{\sqrt{4+x^2}},\ \int \frac{dx}{\sqrt{8-x^2}},\ \int \frac{\operatorname{arctg}\frac{x}{2}}{4+x^2}dx,\ \int 5^{2-4x}dx,\ \int \frac{3x+1}{\sqrt{5x^2+1}}dx,$$

$$\int x\cdot 7^{x^2}dx,\ \int \frac{dx}{x\ln x},\ \int \frac{\cos\sqrt{x}}{\sqrt{x}}dx,\ \int \frac{dx}{\sin x\cos x},\ \int \frac{\sin 3x}{3+\cos 3x}dx,$$

$$\int \frac{e^x}{\sqrt{e^{2x}-2}}dx,\ \int \frac{\sqrt{1+\ln x}}{x\ln x}dx,\ \int x^3\ln x dx,\ \int \sin(\ln x)dx,\ \int x\operatorname{arctg}x dx,$$

$$\int x^3e^{-x^2}dx,\ \int \frac{x\cos x}{\sin^2 x}dx,\ \int \frac{x^2+1}{x^4-5x^2+4}dx,\ \int \frac{dx}{x^2-2x+5},\ \int \frac{dx}{x^2+2x},$$

$$\int \frac{dx}{2+3x-2x^2},\ \int \frac{e^x}{1+e^x+e^{2x}}dx,\ \int \frac{\ln x}{x\sqrt{1-4\ln x-\ln^2 x}}dx,\ \int \frac{\cos x}{\sin^2 x-6\sin x+12}dx,$$

$$\int \sqrt{2-x-x^2}dx,\ \int \sqrt{x-x^2}dx,\ \int \frac{dx}{(x-1)(x+2)x+3)}dx,\ \int \frac{dx}{(x^3-8)^2},$$

$$\int \frac{dx}{x(x+1)^2},\ \int x^2\sqrt{x^2+4}dx,\ \int \frac{x^3}{\sqrt{x-1}}dx,\ \int \frac{x}{\sqrt[3]{x+2}}dx,\ \int \frac{\sqrt{x}}{x+2}dx,$$

$$\int \frac{x^2}{x^2-x+1}dx,\ \int \frac{x^5}{\sqrt{1-x^2}}dx,\ \int \cos^3 x dx,\ \int \sin^5 x dx,\ \int \cos^2 x dx,$$

$$\int \cos^4 x dx,\ \int \frac{dx}{\sin^5 x},\ \int \frac{dx}{\cos^6 x},\ \int \frac{dx}{\sin^2 x\cos^4 x},\ \int \frac{dx}{2+\cos x},$$

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

$$\int \frac{1+tgx}{1-tgx}dx,\ \int \frac{\cos x}{1+\cos x}dx,\ \int \frac{dx}{1+\sin^2 x},\ \int \frac{dx}{(x^2+1)^2},\ \int \frac{dx}{(x+1)\sqrt{x^2-1}},$$

$$\int \frac{dx}{(x+2)\sqrt{4-x^2}},\ \int (x^3+3x+1)\sin 5x dx,\ \int x\arcsin x dx,\ \int \frac{\operatorname{arctg} x}{\sqrt{(x^2+1)^3}}dx,$$

$$\int \frac{2x-8}{\sqrt{1-x-x^2}}dx,\ \int \frac{3x^3+4}{\sqrt{x^2-8x}}dx,\ \int \frac{x^2}{\sqrt{(3-x)(x-5)}}dx,\ \int \frac{3x^3+7x^2-2x-3}{\sqrt{3-2x-x^2}}dx,$$

$$\int \frac{dx}{1+2\cos^2 x},\ \int \sqrt{\sin^2 x+\sin x}\cos x\ dx,\ \int \frac{x^5+x^4+3x^3+x^2-2}{x^4-1}dx,$$

$$\int \frac{dx}{x^4+6x^2+25},\ \int \frac{2x^4-10x^3+21x^2-20x+5}{x^2-3x+2}dx.$$