

1. Obliczyć całki

$$\begin{array}{lll}
 \text{(a)} \int 3^x 5^{2x} dx, & \text{(b)} \int \frac{x^2 dx}{1+x^2}, & \text{(c)} \int \frac{x}{\sqrt{1-x^4}} dx, \\
 \text{(d)} \int \frac{1}{x^4+1} dx, & \text{(e)} \int 4^{x^2} x dx, & \text{(f)} \int \frac{dx}{4x^2+4x+3}, \\
 \text{(g)} \int \frac{4}{2x^2+4x+11} dx, & \text{(h)} \int \frac{dx}{-x^2-9}, & \text{(i)} \int \frac{x dx}{x^4+9}, \\
 \text{(j)} \int \frac{e^{\sqrt{x}} dx}{\sqrt{x}}.
 \end{array}$$

2. Obliczyć całki z wyrażeń wymiernych

$$\begin{array}{ll}
 \text{(a)} \int \frac{5+x}{10x+x^2} dx, & \text{(b)} \int \frac{2x-1}{x^2-6x+9} dx, \\
 \text{(c)} \int \frac{dx}{2x^2-2x+5}, & \text{(d)} \int \frac{2x^4+5x^2-2}{2x^3-x-1} dx, \\
 \text{(e)} \int \frac{2x^3+x^2+5x+1}{(x^2+3)(x^2-x+1)} dx, & \text{(f)} \int \frac{dx}{x^4+1}, \\
 \text{(g)} \int \frac{2x^5+6x^3+1}{x^4+3x^2} dx, & \text{(h)} \int \frac{x^3-3}{x^4+10x^2+25} dx.
 \end{array}$$

3. Obliczyć całki z wyrażeń niewymiernych:

$$\begin{array}{ll}
 \text{(a)} \int \frac{x^3}{\sqrt{x^2+x+1}} dx, & \text{(b)} \int \frac{dx}{x^3\sqrt{1+2x+2x^2}}, \\
 \text{(c)} \int \frac{\sqrt{5\ln x+7}}{x} dx, & \text{(d)} \int \frac{dx}{(x+1)\sqrt{1+2x-3x^2}}, \\
 \text{(e)} \int \frac{\sqrt{x^2+2x+4}}{(x-1)^2} dx, & \text{(f)} \int \frac{\sqrt[3]{\frac{1+x}{1-x}}+x}{1-\sqrt[5]{\frac{1+x}{1-x}}} dx, \\
 \text{(g)} \int \frac{\sqrt{x}-\sqrt[4]{x}}{3x+4\sqrt{x}} dx, & \text{(h)} \int \frac{dx}{\sqrt[3]{(x+1)^2(x-1)^7}}.
 \end{array}$$