ZESTAW ZADAŃ VII

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)** $\int x^2\sqrt{x+1}dx$, $u=x+1$, **(f)** $\int\frac{dx}{\sqrt{x^2+a}}$, $u=x+\sqrt{x^2+a}$, $a\in\mathbb{R}$.

Zadanie 3 Oblicz całki nieoznaczone przez podstawienie:
(a) $\int e^{-3x}dx$, **(b)** $\int\sqrt{3x+4}dx$, **(c)** $\int x(3x^2+1)^5dx$, **(d)** $\int x^2\sin(1-x^3)dx$, **(e)** $\int\frac{dx}{x\ln^2 x}$,
(f) $\int\frac{\cos x dx}{1+\sin^2 x}$, **(g)** $\int\sin^3 x dx$, **(h)** $\int\frac{e^{\frac{1}{x}}dx}{x^2}$, **(i)** $\int\frac{e^x dx}{\sqrt{1-e^{2x}}}$,
(j) $\int\cos^2 x dx$, **(k)** $\int\frac{\arcsin^3 x dx}{\sqrt{1-x^2}}$, **(l)** $\int(x+2)\sqrt{x-1}dx$, **(m)** $\int\frac{x^2dx}{x^6+1}$,
(n) $\int\frac{dx}{\sqrt{x}(x+1)}$, **(o)** $\int\sqrt{4-x^2}dx$.