Calc 2 – Practice integrals – Dr. Edward D. Kim (University of Wisconsin - La Crosse)

Sometimes the integrals in one row all use the same strategy. Other times, there are different strategies to use for integrals in the same row. Some integrals can be done multiple ways! **Click on the integral for a link to solution.**

a) $\int \sin^{-1} x\,dx$ $\int \frac{1}{\sqrt{1-x^2}}\,dx$ $\int \frac{\sin^{-1} x}{\sqrt{1-x^2}}\,dx$ $\int \frac{x}{\sqrt{1-x^2}}\,dx$

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

c) $\int \ln x\,dx$ $\int x \ln x\,dx$ $\int x^2 \ln x\,dx$ $\int x^3 \ln x\,dx$ $\int x^4 \ln x\,dx$

d) $\int \frac{1}{x^2+1}\,dx$ $\int \frac{1}{x^2+9}\,dx$ $\int \frac{1}{x^2-9}\,dx$ $\int \frac{x}{x^2+5}\,dx$ $\int \frac{x^2}{x^2+5}\,dx$ $\int \frac{x^3}{x^2+5}\,dx$

e) $\int \sqrt{4-x^2}\,dx$ $\int \sqrt{4-4x^2}\,dx$ $\int \sqrt{1-4x^2}\,dx$ $\int \sqrt{1-5x^2}\,dx$ $\int \sqrt{5-x^2}\,dx$ $\int \sqrt{4-5x^2}\,dx$

f) $\int \frac{x^7}{\sqrt{25+x^2}}\,dx$ $\int \frac{x^7}{\sqrt{25+4x^2}}\,dx$ $\int \frac{x^7}{\sqrt{25+3x^2}}\,dx$ $\int \frac{x^7}{\sqrt{11+3x^2}}\,dx$ $\int \frac{x^7+x}{\sqrt{25+x^2}}\,dx$

g) $\int e^x \cos x\,dx$ $\int e^x \sin x\,dx$ $\int 2^x \cos x\,dx$ $\int 2^x \sin x\,dx$ $\int 2^x \cos(3x)\,dx$ $\int 2^x \sin 3x\,dx$

h) $\int \frac{1}{x^2+2x+1}\,dx$ $\int \frac{1}{x^2+2x+2}\,dx$ $\int \frac{1}{x^2+2x+3}\,dx$ $\int \frac{1}{x^2+2x-3}\,dx$ $\int \frac{1}{x^2+2x-24}\,dx$ $\int \frac{1}{x^2+2x-25}\,dx$

i) $\int \sin x \cos x\,dx$ $\int \sin^3 x \cos x\,dx$ $\int \sin^{11} x \cos x\,dx$ $\int \sin^3 x \cos^{33} x\,dx$ $\int \sin^2 x \cos^5 x\,dx$

j) $\int 2 \sin x \cos x\,dx$ $\int \sin 3x \cos 5x\,dx$ $\int \sin 3x \sin 5x\,dx$ $\int \cos 3x \cos 5x\,dx$

k) $\int \sin x\,dx$ $\int \cos x\,dx$ $\int \tan x\,dx$ $\int \sec x\,dx$ $\int \csc x\,dx$ $\int \cot x\,dx$

l) $\int \sin^2 x\,dx$ $\int \cos^2 x\,dx$ $\int \tan^2 x\,dx$ $\int \sec^2 x\,dx$ $\int \csc^2 x\,dx$ $\int \cot^2 x\,dx$

m) $\int \sin^4 x\,dx$ $\int \cos^4 x\,dx$ $\int \tan^3 x\,dx$ $\int \sec^3 x\,dx$ $\int \sec^4 x\,dx$

n) $\int \frac{3}{x^2-1}\,dx$ $\int \frac{x+3}{x^2-1}\,dx$ $\int \frac{x+1}{x^2-1}\,dx$ $\int \frac{x^2+3x+11}{x^2-1}\,dx$ $\int \frac{x^3+1}{x^2-1}\,dx$

o) $\int x \cos x\,dx$ $\int x \cos^2 x\,dx$ $\int x \cos(5x)\,dx$ $\int x^2 \sin x\,dx$ $\int x^2 \sin(5x)\,dx$ $\int x^4 \sin(x^5)\,dx$

p) $\int \tan^6 x \sec^4 x\,dx$ $\int \tan^5 x \sec^4 x\,dx$ $\int \tan^5 x \sec^3 x\,dx$ $\int \cot^5 x \csc^3 x\,dx$

q) $\int (\sin x + 6)^2\,dx$ $\int (\sin x + \cos x)^2\,dx$ $\int \sin^2 x \cos^2 x\,dx$

r) $\int \frac{\sqrt{x^2-25}}{x}\,dx$ $\int \frac{\sqrt{25x^2-25}}{x}\,dx$ $\int \frac{\sqrt{49x^2-25}}{x}\,dx$ $\int \frac{\sqrt{x^2-11}}{x}\,dx$ $\int \frac{\sqrt{11x^2-2}}{x}\,dx$

s) $\int 4 \ln(x^2)\,dx$ $\int \ln(x^2-4)\,dx$ $\int 4x \arctan(x)\,dx$ $\int x \arctan(4x)\,dx$ $\int x \arctan(x+4)\,dx$

t) $\int \frac{1}{\sqrt{x^2+6x+13}}\,dx$ $\int \frac{1}{\sqrt{x^2+6x+9}}\,dx$ $\int \frac{1}{\sqrt{x^2+6x+5}}\,dx$ $\int \frac{1}{\sqrt{16-6x-x^2}}\,dx$