

Calc 2 – Practice integrals

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