

1. Integrate the following:

a) $\int \sqrt[4]{\sin^3(5x)} \cos^5(5x) dx$

b) $\int \sec^3(4x) \tan^3(4x) dx$

c) $\int \cos^4(3x) dx$

d) $\int_0^{\pi/4} \tan^2 x \sec^4 x dx$

e) $\int \frac{1 - \sin x}{\cos x} dx$

f) $\int \sqrt{1 + \cos(5x)} dx$

g) $\int \frac{\cos x + \sin x}{\sin(2x)} dx$

h) $\int \cos(3x)\cos(5x) dx$

i) $\int \cos\left(x + \frac{\pi}{6}\right) \sin x dx$