

Question 3

Integrate:

1. $\int \sin 2x \operatorname{cosec} x \, dx$
 2. $\int \frac{1 + \sin x}{\cos^2 x} \, dx$
 3. $\int \tan^2 x \, dx$
 4. $\int \frac{(1 + \sin x)^2}{\cos^2 x} \, dx$
 5. $\int \frac{\cos^2 x}{1 + \sin x} \, dx$
 6. $\int \frac{1}{1 + \cos x} \, dx$
 7. $\int \frac{(1 + 2 \cos x)^2}{3 \sin^2 x} \, dx$
 8. $\int \sin x \sin 3x \, dx$
 9. $\int \sin^2 2x \, dx$
 10. $\int 2 \cos 3x \sin x \, dx$
- A = $-\frac{5}{3} \cot x - \frac{4}{2} \operatorname{cosec} x - \frac{4}{3} x + C$
 B = $2 \tan x + 2 \sec x + x + C$
 C = $\tan x - x + C$
 D = $\frac{1}{4} \sin 2x - \frac{1}{8} \sin 4x$
 E = $\frac{1}{2} \cos 2x - \frac{1}{4} \cos 4x + C$
 F = $2 \sin x + C$
 G = $\sec x + \tan x + C$
 H = $-2 \sin x + C$
 I = $x + \sin x + C$
 J = $\frac{1}{2} x + \frac{1}{8} \sin 4x + C$
 K = $\frac{1}{2} \cos 2x - \frac{1}{2} \cos 4x + C$
 L = $\frac{1}{4} \sin 2x - \frac{1}{8} \sin 4x + C$
 M = $\frac{5}{3} \cot x - \frac{4}{3} \operatorname{cosec} x - \frac{4}{3} x + C$
 N = $x + \cos x + C$
 O = $\sec x - \tan x + C$
 P = $\frac{1}{2} x - \frac{1}{8} \sin 4x + C$
 Q = $\tan x + x + C$
 R = $\sec x - \cot x + C$
 S = $\operatorname{cosec} x - \cot x + C$
 T = $2 \tan x + 2 \sec x - x + C$