

Integration

For each of the following, integrate the function with respect to x . You must show all your working.

1. $\int 3 \sec x \tan x - \frac{2}{x} dx$

2. $\int e^{2x} + \cos^2 x dx$

3. $\int \cos (2x + 3) dx$

4. $\int (e^{2x} + 1)^2 dx$

5. $\int \frac{\cos x}{3 + 2 \sin x} dx$

6. $\int 5 \tan x \sec^4 x dx$

7. $\int x \sqrt{(2x + 5)} dx$

Use the substitution $u^2 = 2x + 5$

8. $\int x \cos x dx$

9. $\int x^2 e^x dx$