

Q1. Evaluate the integrals;

i.  $\int \frac{dx}{4x^2 + 6}$

ii.  $\int x \ln x \, dx$

iii.  $\int \tan^3 x \, dx$

iv.  $\int_{\frac{\pi}{2}}^{\pi} \sqrt{\sin x - \sin^3 x} \, dx$

v.  $\int x \cdot 2^{2x} \cdot 3^{1-x} \, dx$