

## Integration Worksheet

1. Differentiate the function  $\int_1^{x^2} \sqrt{\tan^2 t + e^t} dt$ .

2. Evaluate the following integrals.

(i)  $\int \sin x \cos x dx$

(ii)  $\int \frac{x}{\sqrt{2x-1}} dx$

(iii)  $\int_0^2 x\sqrt{4-x^2} dx$

(iv)  $\int \frac{3}{5x-1} dx$

(v)  $\int_0^{\frac{\pi}{4}} \tan x \sec^2 x dx$