

Q2) (a)

(ii) $\int_0^4 e^{\frac{1}{2}x} dx$

Substitute u : $= \int_0^2 e^u \times 2 du$

Remove constant: $\int a \times f(x) dx = a \times \int f(x) dx$

$= 2 \times \int_0^2 e^u du$

Use the common integral: $\int e^u du = e^u$

$= 2 [e^u]_0^2$

~~ans~~ $= \underline{\underline{2(e^2 - 1) = 12.7781}}$