11	4b	Evaluate $\int_e^{e^3} \frac{5}{x}\, dx$.	2

State Mean: **1.49/2**

$$\int_e^{e^3} \frac{5}{x}\, dx = 5\int_e^{e^3} \frac{1}{x}\, dx$$

$$= 5[\log_e e^3 - \log_e e]$$

$$= 5[3 - 1]$$

$$= 10$$

* These solutions have been provided by *projectmaths* and are not supplied or endorsed by the Board of Studies

Board of Studies: Notes from the Marking Centre

Most candidates recognised the primitive would be a log function, but a significant number used an incorrect constant or integrated to get $\ln(5x)$. Those who integrated correctly usually went on to evaluate $\log e$ and $\log e^3$ correctly.

Source: **http://www.boardofstudies.nsw.edu.au/hsc_exams/**