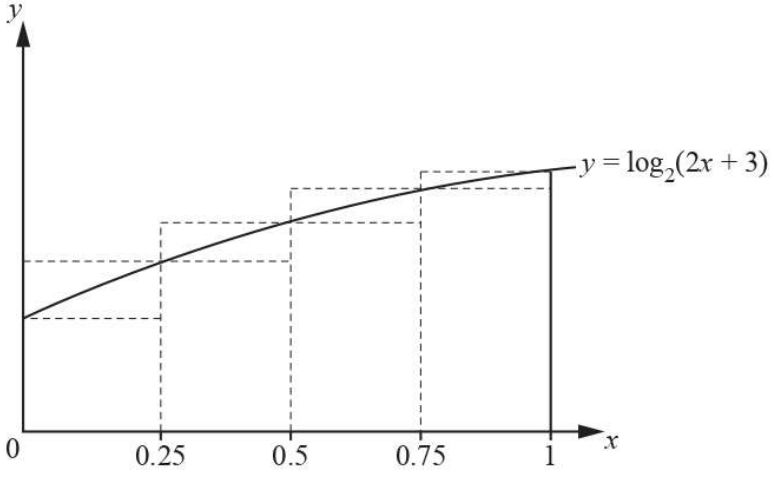
3



The diagram shows part of the curve $y = \log_2(2x+3)$.

(a) Use the rectangles in the diagram to determine lower and upper bounds for $\int_0^1 \log_2(2x+3)\,dx$. Give your answers correct to **3** significant figures. **[2]**

(b) Use the trapezium rule with **5 intervals** of equal width to determine an estimate for $\int_0^1 \log_2(2x+3)\,dx$. Give your answer correct to **3** significant figures. **[3]**

(c) Explain whether the value from part **(b)** is an under-estimate or an over-estimate. **[1]**