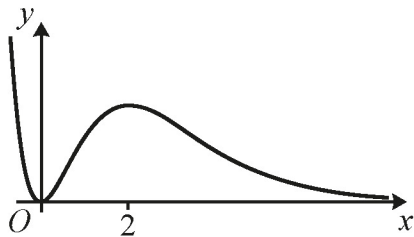


1



The diagram shows part of the curve $y = x^2 e^{-x}$.

- (a) Use the trapezium rule with 4 intervals of equal width to find an estimate for $\int_0^2 x^2 e^{-x} dx$.
Give your answer correct to **3** significant figures. [4]
- (b) Explain how the trapezium rule could be used to obtain a more accurate estimate for $\int_0^2 x^2 e^{-x} dx$. [1]
- (c) Explain why it is not clear from the diagram whether the value from part (a) is an under-estimate or an over-estimate for $\int_0^2 x^2 e^{-x} dx$. [2]