
5

$$f(x) = \begin{cases} k(2x^2 - x^3) & 0 \leq x \leq 2, \\ 0 & \text{otherwise.} \end{cases}$$

(a) Show that $k = \frac{3}{4}$.

[3]

This image shows a full page of white paper with horizontal dotted lines. The lines are evenly spaced and run across the width of the page, providing a guide for handwriting practice. There are no margins, text, or other markings on the page.

The median of X is denoted by m .

- (b) (i)** Write down the value of $P(X \leq m)$. [1]

- (ii) Hence find $P(E(X) \leq X \leq m)$. [5]

Handwriting practice lines (dotted lines) for the letter '2'.