7. A council is setting aside an area of land to create six fenced plots where local residents can grow their own food. Each plot will be a rectangle measuring $x$ metres by $y$ metres as shown in the diagram.

(a) The area of land being set aside is $108 \text{ m}^2$. Show that the total length of fencing, $L$ metres, is given by

$$L(x) = 9x + \frac{144}{x}.$$ 

(b) Find the value of $x$ that minimises the length of fencing required.

Answers
(a) Proof  (b) $x = 4$