

- 8** A solid rectangular block has a base which measures $2x$ cm by x cm. The height of the block is y cm and the volume of the block is 72 cm^3 .

(i) Express y in terms of x and show that the total surface area, $A \text{ cm}^2$, of the block is given by

$$A = 4x^2 + \frac{216}{x}. \quad [3]$$

Given that x can vary,

- (ii) find the value of x for which A has a stationary value, [3]
- (iii) find this stationary value and determine whether it is a maximum or a minimum. [3]