

- 8** A solid rectangular block has a square base of side x cm. The height of the block is h cm and the total surface area of the block is 96 cm^2 .

(i) Express h in terms of x and show that the volume, $V \text{ cm}^3$, of the block is given by

$$V = 24x - \frac{1}{2}x^3. \quad [3]$$

Given that x can vary,

- (ii) find the stationary value of V , [3]
- (iii) determine whether this stationary value is a maximum or a minimum. [2]