

- 5 A solid cuboid has width x cm, length $4x$ cm and height h cm.
The volume of the cuboid is 75 cm^3 and the surface area of the cuboid is $S \text{ cm}^2$

(a) Show that $S = 8x^2 + \frac{375}{2x}$ (4)

Given that x can vary, using calculus,

- (b) (i) find to 3 significant figures, the value of x for which S is a minimum, (5)
(ii) justify that this value of x gives a minimum value of S

- (c) Find, to 3 significant figures, the minimum value of S (2)

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