23. A car travels 73 miles in 2·4 hours. The distance is measured correct to the nearest mile and the time is measured correct to the nearest 0·1 hours. Find the greatest average speed of the car over this distance. Give your answer correct to one decimal place.

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4.

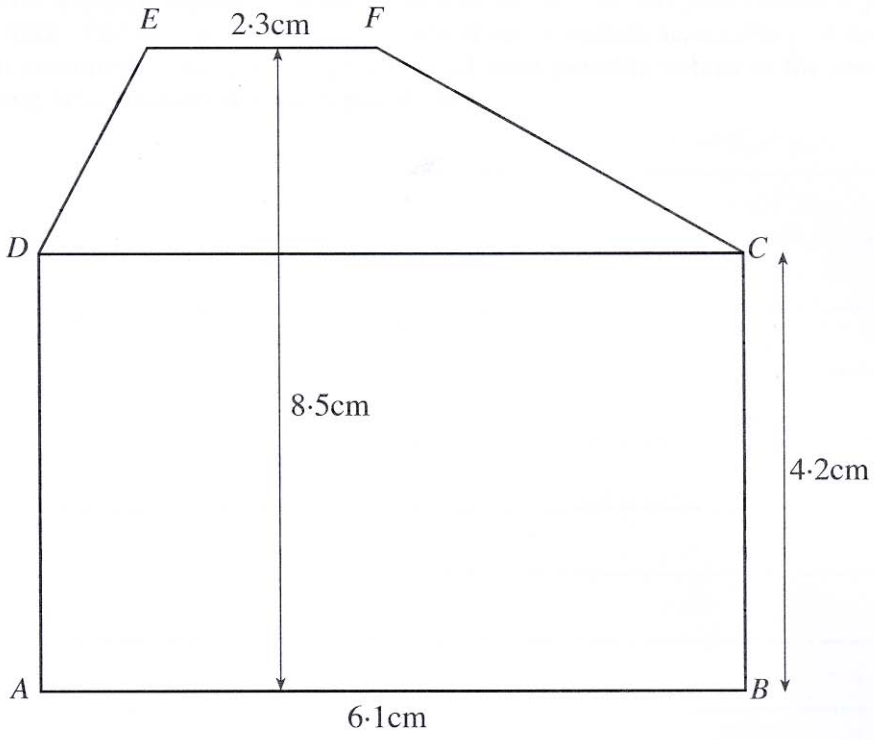

Diagram not drawn to scale.

ABCFED represents the uniform cross-section of a solid block of material. *ABCD* is a rectangle in which $AB = 6{\cdot}1$ cm and $BC = 4{\cdot}2$ cm. *EF* is of length 2·3 cm and is parallel to *AB*. The distance between *EF* and *AB* is 8·5 cm.

(a) Calculate the area of cross-section of the block.

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[3]

(b) The block has this uniform cross-section along its length of 12·6 cm and has a mass of 2 kg. Calculate the density, in g/cm^3, of the material from which the block is made.

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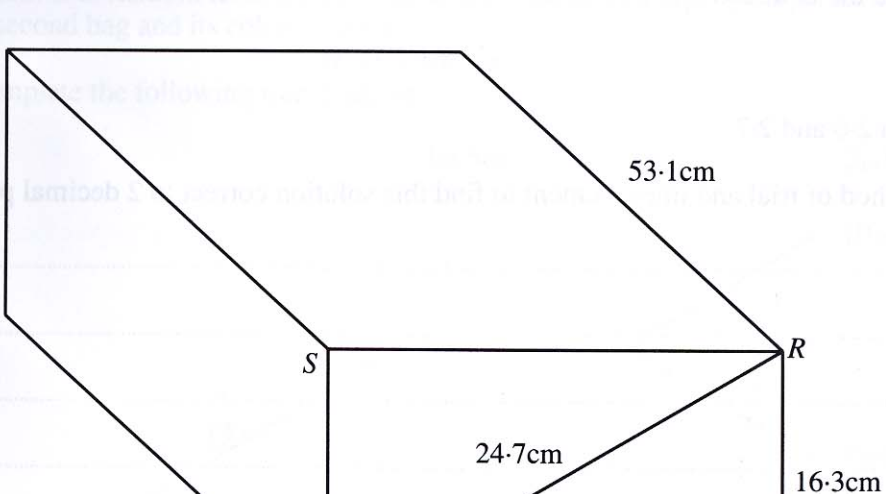

Diagram not drawn to scale.

The diagram shows a cuboid of length 53·1 cm. The cross-section, $PQRS$, is such that $PR = 24{\cdot}7$ cm and $QR = 16{\cdot}3$ cm.

(a) Calculate the length of PQ.

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(b) The density of the material from which the cuboid is made is 4·3 g/cm^3. Calculate the mass of the cuboid in kilograms.

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[3]

5. *(a)* A rod has a uniform circular cross-section of radius 2·6 cm and a length of 95 cm. Calculate the volume of the rod.

[3]

(b) The rod has a mass of 8·6 kg. Calculate the density of the material from which the rod is made, giving your answer in g/cm^3.

[3]