

13. A metal bar has a uniform cross-section in the shape of a trapezium $ABCD$ in which AB is parallel to DC . The length of AB is 9.6 cm and the length of DC is 6.2 cm . The perpendicular distance between the two parallel sides is 5 cm .

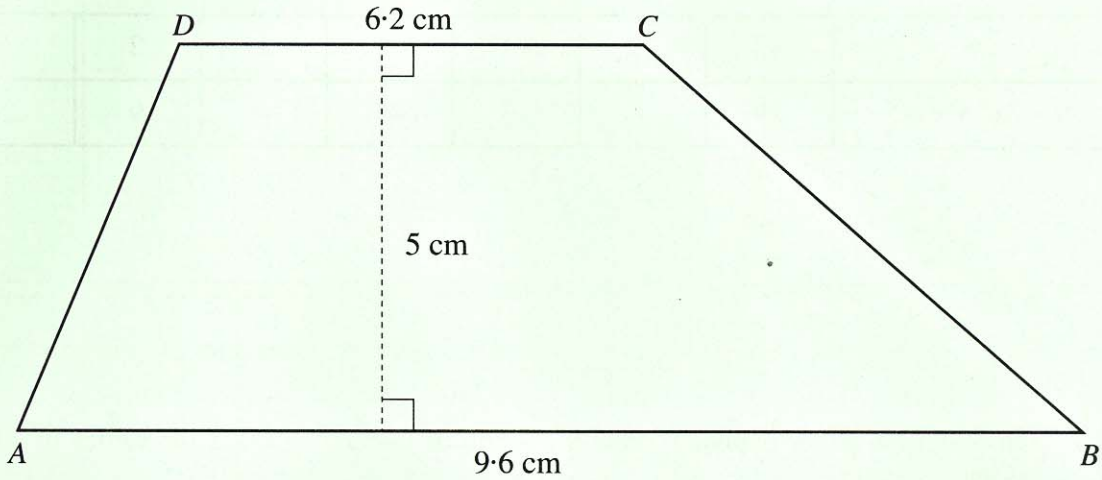


Diagram not drawn to scale.

- (a) Calculate the area of the cross-section of the metal bar, stating clearly the units of your answer.



[3]

- (b) The metal bar is 13.6 cm long and has a mass of 2.4 kg . Calculate the density of the metal from which the rod is made, give your answer in g/cm^3 .

[4]

16. (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]

16.

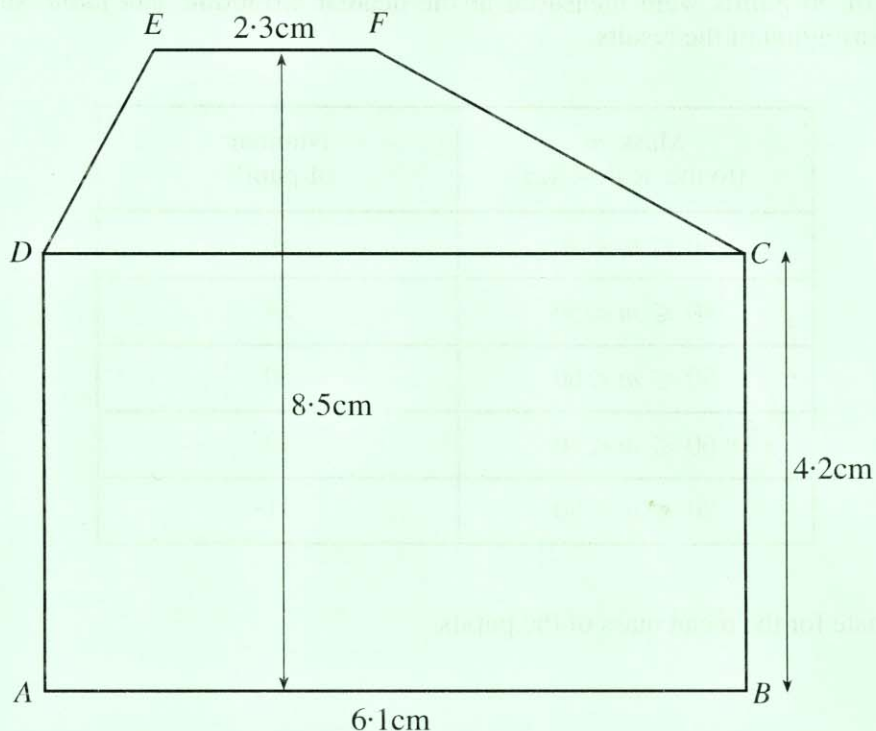


Diagram not drawn to scale.

$ABCFED$ represents the uniform cross-section of a solid block of material. $ABCD$ is a rectangle in which $AB = 6.1\text{ cm}$ and $BC = 4.2\text{ cm}$. 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.



- (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.



18.

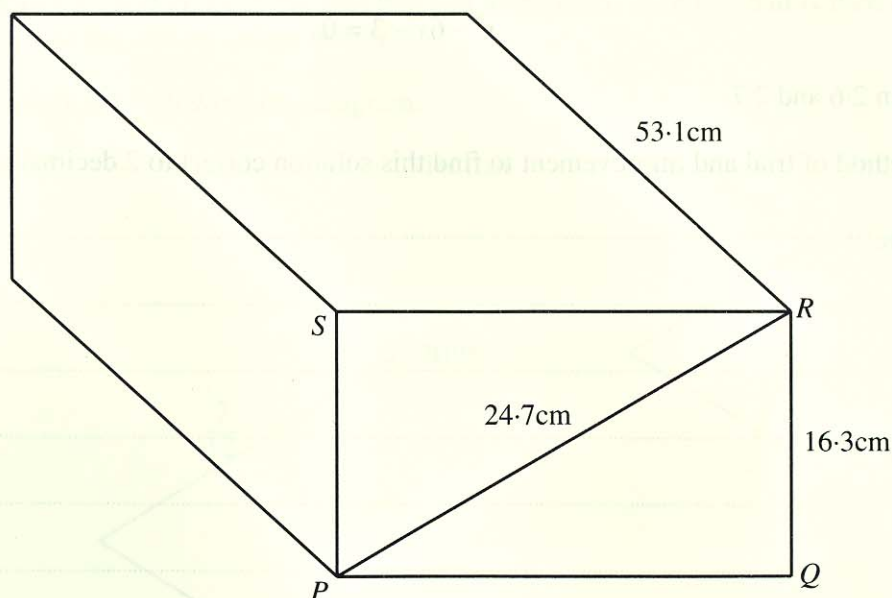


Diagram not drawn to scale.

The diagram shows a cuboid of length 53.1 cm. The cross-section, $PQRS$, is such that $PR = 24.7$ cm and $QR = 16.3$ cm.

(a) Calculate the length of PQ .



[3]

(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.

[3]

Turn over.