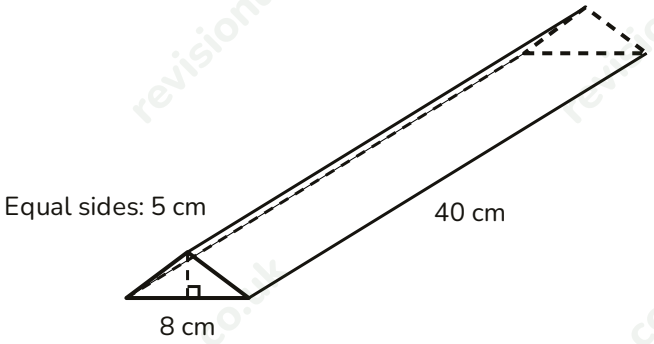
4.12 Volume and Surface Area of Prisms: 10-minute Pack

Calculators not allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

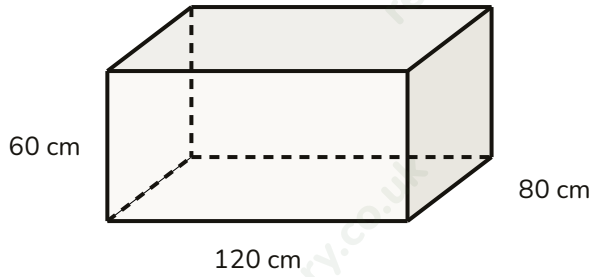
1 A metal beam is a triangular prism. The triangle end is isosceles with base 8 cm and equal sides 5 cm. The beam is 40 cm long. Calculate the volume of the beam. (Hint: you may need to find the triangle height.)



(3)

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2 A rectangular prism has internal dimensions 120 cm by 80 cm by 60 cm. A decorator will line the inside and needs to buy lining that is sold by the square metre. Calculate how many square metres of lining the decorator needs, ignoring any waste. Give your answer to 1 decimal place.



(2)

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3 A fish tank is 62 cm long, 27 cm wide and 31 cm high. How many litres of water does it hold when it is full? (1 litre = 1000 cm^3)

(3)

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Mark scheme · 4.12 Volume and Surface Area of Prisms: 10-minute Pack

Question 1

find triangle height using Pythagoras: half base = 4, height = $\sqrt{5^2 - 4^2} = \sqrt{25 - 16} = 3$ cm	**M1**
area triangle = 1/2 x base x height = 1/2 x 8 x 3 = 12 cm²	**M1**
volume = 12 x 40 = 480 cm³ cao	**A1**

Answer: **480 cm³**

Question 2

total surface area in cm2 = 2(120x80 + 120x60 + 80x60) = 2(9600 + 7200 + 4800) = 2 x 21600 = 43200 cm²	**M1**
convert to m2: 43200 cm² = 4.32 m² so 4.3 m² to 1 d.p. cao	**A1**

Answer: **4.3 m²**

Question 3

62 x 27 x 31 = 51894	**M1**
51894 ÷ 1000	**M1**
51.894 litres cao	**A1**

Answer: **51.894 litres**

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