



**Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Score:** \_\_\_\_\_ / 41

- 1** Two solid ornaments, P and Q, are mathematically similar.

P has height 4 cm and Q has height 12 cm.

The volume of P is  $20 \text{ cm}^3$ .

Work out the volume of Q.

(3 marks)

Answer \_\_\_\_\_

- 2** Two mathematically similar signs are made for a shop.

The small sign is 5 cm wide and has area  $50 \text{ cm}^2$ .

The large sign is 8 cm wide.

Work out the area of the large sign.

(3 marks)

Answer \_\_\_\_\_

- 3** A shop sells two mathematically similar tins of paint. The small tin is 12 cm tall and holds 0.8 litres. The large tin is 18 cm tall.

a. Work out the capacity of the large tin.

b. The small tin costs £5.60. The price of paint is the same per litre for both tins. Work out the cost of the large tin.

(4 marks)

Answer \_\_\_\_\_

- 4 Two mathematically similar solids, A and B, have volumes in the ratio 64 : 343.  
Find the ratio of the surface area of A to the surface area of B.  
Give your answer in its simplest form.

(3 marks)

Answer \_\_\_\_\_

- 5 Two mathematically similar candles, C and D, are made from the same wax.  
C has surface area  $36 \text{ cm}^2$  and D has surface area  $81 \text{ cm}^2$ .  
The volume of C is  $24 \text{ cm}^3$ .  
Work out the volume of D.

(3 marks)

Answer \_\_\_\_\_

- 6 Two mathematically similar statues are to be painted.  
The small statue has height 10 cm and surface area  $80 \text{ cm}^2$ .  
The large statue has height 25 cm.  
Work out the surface area of the large statue.

(4 marks)

Answer \_\_\_\_\_

- 7 Two solid trophies are mathematically similar and are made from the same metal.  
The small trophy has height 6 cm and mass 120 g.  
The large trophy has height 9 cm.  
Work out the mass of the large trophy.

(4 marks)

Answer \_\_\_\_\_

- 8 Two mathematically similar bottles hold 250 ml and 686 ml of juice when full.  
The small bottle has height 15 cm.  
Work out the height of the large bottle.

(4 marks)

Answer \_\_\_\_\_

- 9 Two mathematically similar solids, S and T, have volumes  $135 \text{ cm}^3$  and  $320 \text{ cm}^3$ .  
The surface area of S is  $180 \text{ cm}^2$ .  
Work out the surface area of T.

(4 marks)

Answer \_\_\_\_\_

- 10 In triangle ABC, D lies on AB and E lies on AC so that DE is parallel to BC.  
 $AD : DB = 2 : 1$ .  
The area of triangle ADE is  $24 \text{ cm}^2$ .  
Work out the area of the trapezium DBCE.

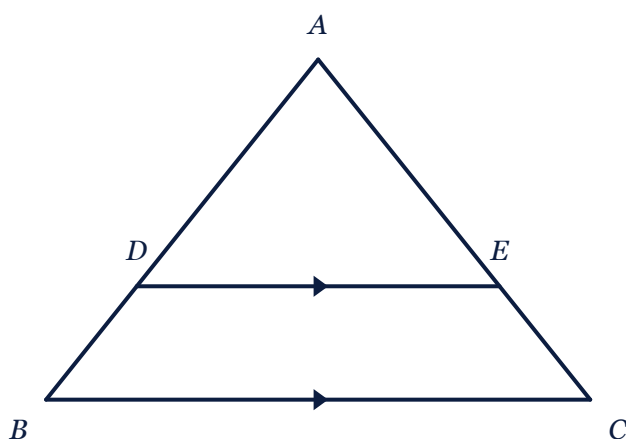


Diagram NOT accurately drawn

(4 marks)

Answer \_\_\_\_\_

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Two mathematically similar containers, A and B, have volumes  $400 \text{ cm}^3$  and  $1350 \text{ cm}^3$ .

a. Container A has height 12 cm. Work out the height of container B.

b. Container B has surface area  $468 \text{ cm}^2$ . Work out the surface area of container A.

(5 marks)

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Answer

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End of questions | Total 41 marks