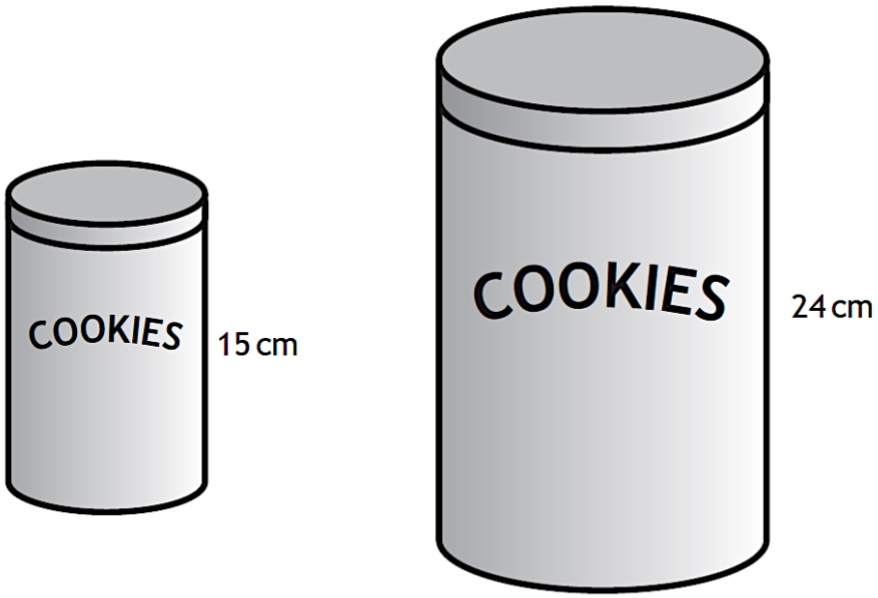
National 5 Mathematics

Similar Figures - Questions

Marks are indicated in brackets after each question number

2014 Paper 2 Question 5, (3)

A supermarket sells cylindrical cookie jars which are mathematically similar.



The smaller jar has a height of 15 centimetres and a volume of 750 cubic centimetres.

The larger jar has a height of 24 centimetres.

Calculate the volume of the larger jar.

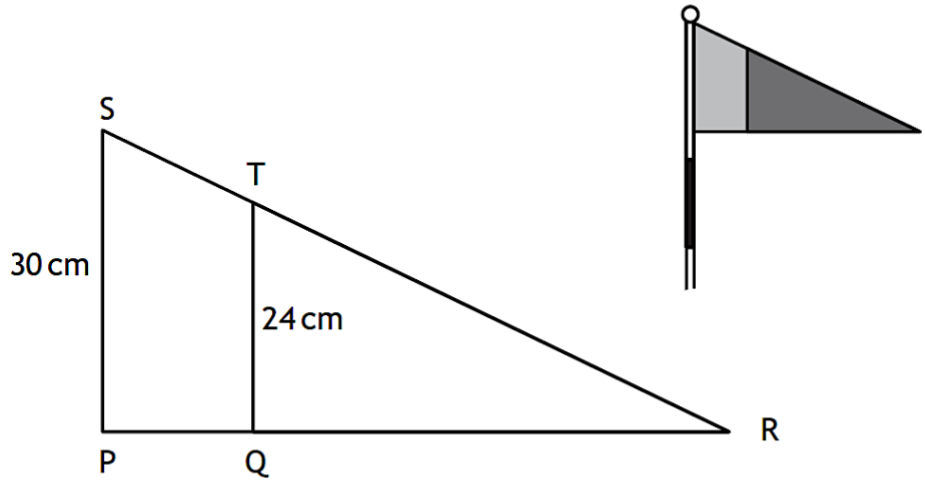
2015 Paper 2 Question 9, (4)

The flag at each hole on a golf course is coloured red and blue.

The diagram below represents a flag.

Triangle QRT represents the red section.

PQTS represents the blue section.



Triangles PRS and QRT are mathematically similar.

The area of triangle QRT is 400 square centimetres.

Calculate the area of PQTS, the blue section of the flag.

2016 Paper 2 Question 11, (3)

Two pictures are mathematically similar in shape.

100 cm

60 cm

The cost of each picture is proportional to its area.

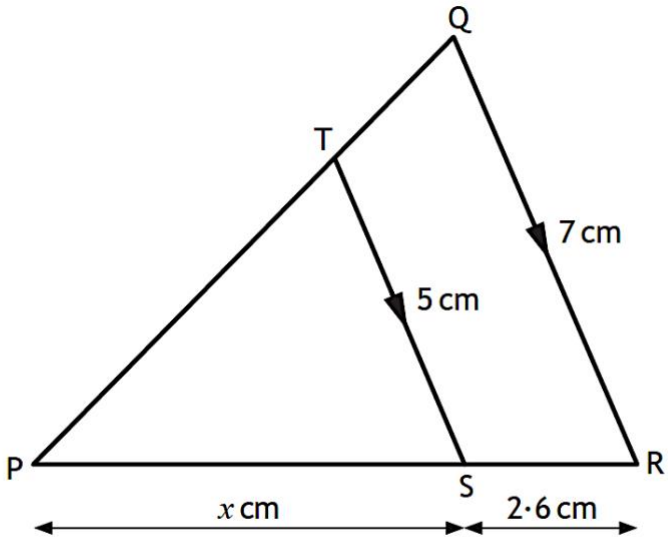
The large picture costs £13·75.

Find the cost of the small picture.

2017 Paper 1 Question 15, (3)

In the diagram below:

- TS is parallel to QR
- TS = 5 centimetres
- QR = 7 centimetres
- SR = 2·6 centimetres



The length of PS is x centimetres.

Calculate the value of x.

2018 Paper 2 Question 18, (3) (2)

A cinema sells popcorn in two different sized cartons.

The small carton is 16 centimetres deep and has a volume of 576 cubic centimetres.

The large carton is 24 centimetres deep and has a volume of 1125 cubic centimetres.

(a) Show that the two cartons are **not** mathematically similar.

The large carton is redesigned so that the two cartons are **now** mathematically similar.

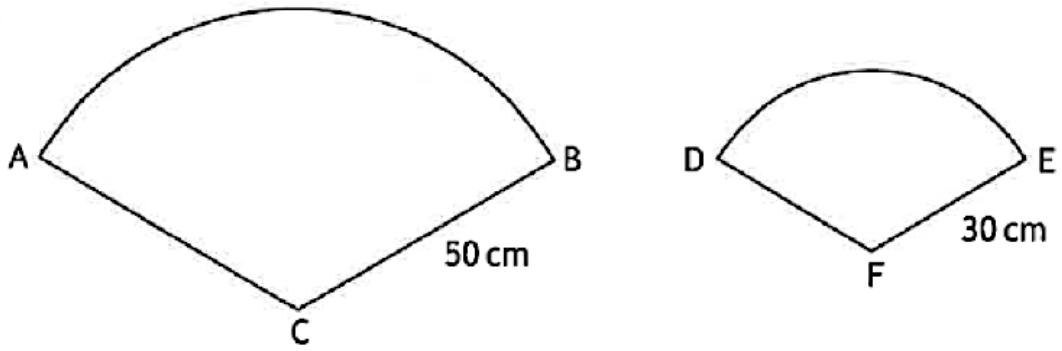
The volume of the redesigned large carton is 1500 cubic centimetres.

(b) Calculate the depth of the redesigned large carton.

2019 Paper 2 Question 12, (3)

In the diagram

- ABC is a sector of a circle, centre C
- DEF is a sector of a circle, centre F.



The sectors are mathematically similar.

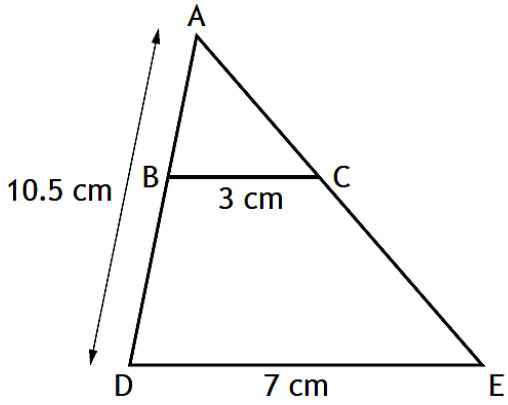
The area of the larger sector, ABC, is 2750 square centimetres.

(a) Calculate the area of the smaller sector, DEF.

2024 Paper 1 Question 14, (3)

In the diagram, triangles ABC and ADE are mathematically similar.

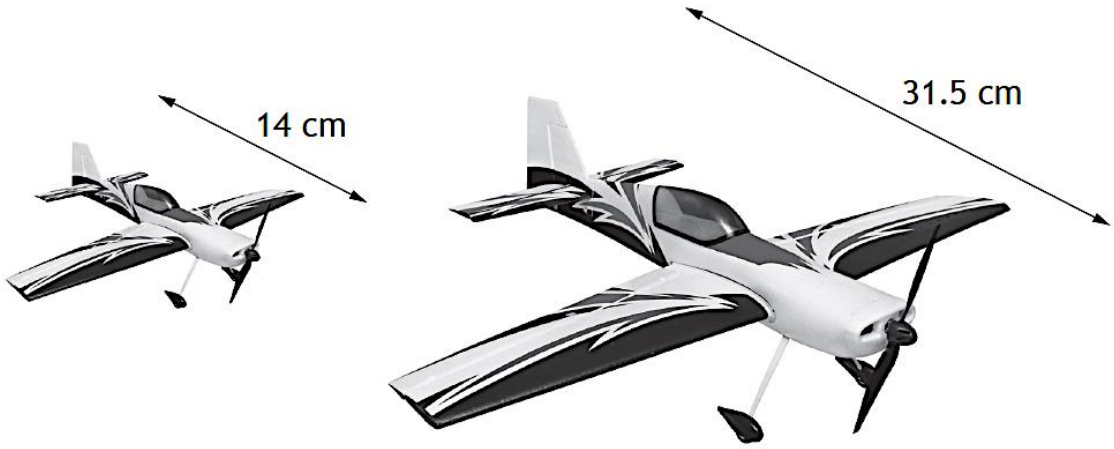
- BC = 3 centimetres
- DE = 7 centimetres
- AD = 10.5 centimetres



Calculate the length of BD.

2025 Paper 2 Question 11, (3)

Two model aircraft are mathematically similar.



The small model is 14 centimetres long, and the area of one wing is 24 square centimetres.

The large model is 31.5 centimetres long.

Calculate the **area** of one wing of the large model.