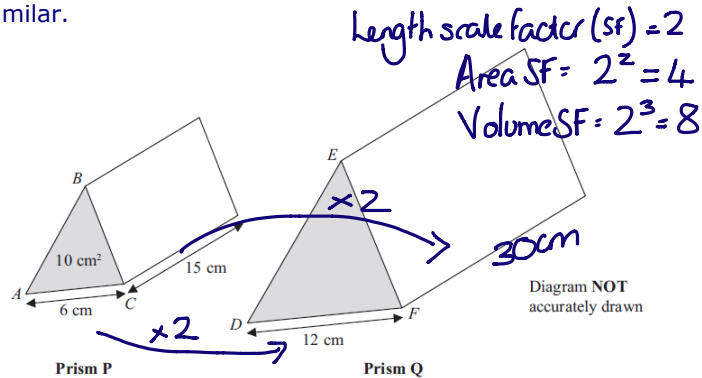


Similar shapes

How to ...

P and **Q** are two triangular prisms that are mathematically similar.



Prism **P** has triangle ABC as its cross section.

Prism **Q** has triangle DEF as its cross sections.

AC = 6 cm and DF = 12 cm

The area of the cross section of prism **P** is 10 cm²

The length of prism **P** is 15 cm.

Work out the volume of prism **Q**.

use area scale factor

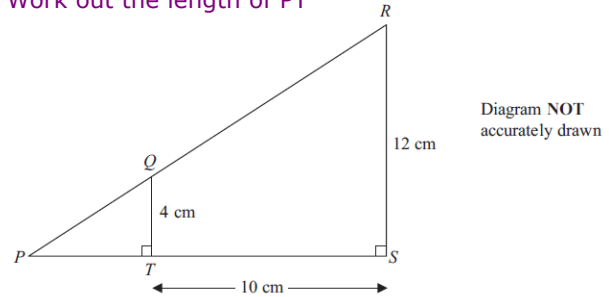
$$\text{Area of DEF} = 10 \times 4 = 40 \text{ cm}^2$$

$$\text{Volume of Q} = 40 \times 30 = 1200 \text{ cm}^3$$

There was 1 mark for stating the units 😊 (4)

Now have a go yourself ...

- (1) Work out the length of PT



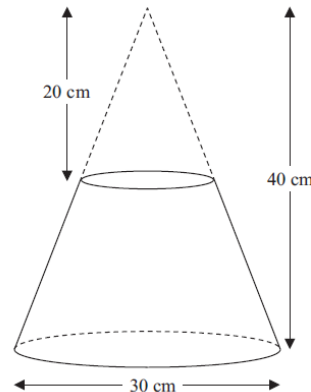
- (2) A frustrum is made by removing a small cone from a similar larger one.

The height of the small cone is 20 cm.

The height of the large cone is 40 cm.

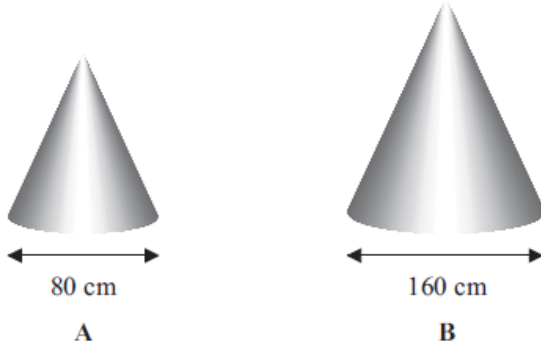
The diameter of the base of the large cone is 30 cm.

Work out the volume of the frustrum. Give your answer correct to 3 significant figures.



Exam Questions

Ali has two solid cones made from the same type of metal.



The two solid cones are mathematically similar.
The base of cone **A** is a circle with diameter 80 cm.
The base of the cone **B** is a circle with diameter 160 cm.
Ali uses 80 ml of paint to paint cone **A**.
Ali is going to paint cone **B**.
(a) work out how much paint, in ml, he will need.

The volume of cone **A** is $171\,700\text{ cm}^3$.
(b) Work out the volume of cone **B**.

(5)

Ready to be marked ?

Checklist



Answer checked



Working out shown

Keywords



Things to remember ...



What went well ...



Teacher comment ..