MME

Frustums

Please write clearly in block capitals

Forename:
Surname:

Materials

For this paper you must have:
• mathematical instruments

You **can** use a calculator.

Instructions

• Use black ink or black ball-point pen. Draw diagrams in pencil.
• Fill in the boxes at the top of this page.
• Answer all questions.
• You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
• Do all rough work in this book. Cross through any work you do not want to be marked.

Information

• The marks for questions are shown in brackets.
• You may ask for graph paper, tracing paper and more answer paper. These must be tagged securely to this answer book.

Advice

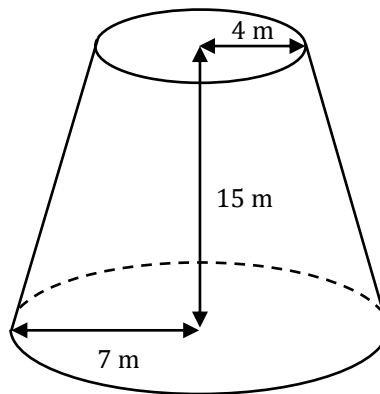• In all calculations, show clearly how you work out your answer.

1   A cone with a height of 35 cm has had part of the shape removed.

This has the left the frustum shown below.

The vertical height is 15 m

The radius of the base is 7 m

The top radius is 4 m

Calculate the volume of the frustum.

Give your answer to 2 decimal places.

[3 marks]

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Answer _____ m³

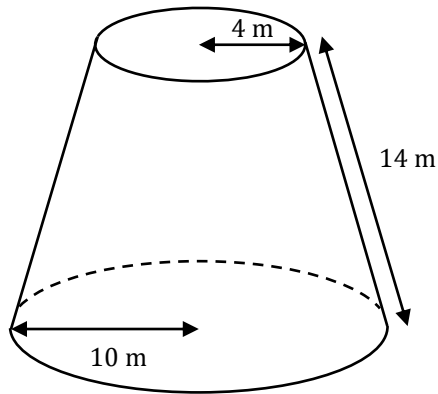**Turn over for next question**

3

Turn over ►

2   A frustum is shown below.

The slanted height of the frustum 14 m

The slanted height of the original cone is 23.3 m

The radius of the base is 10 m

The top radius is 4 m

Calculate the surface area of the frustum above.

Give your answer to 2 decimal places.

[5 marks]

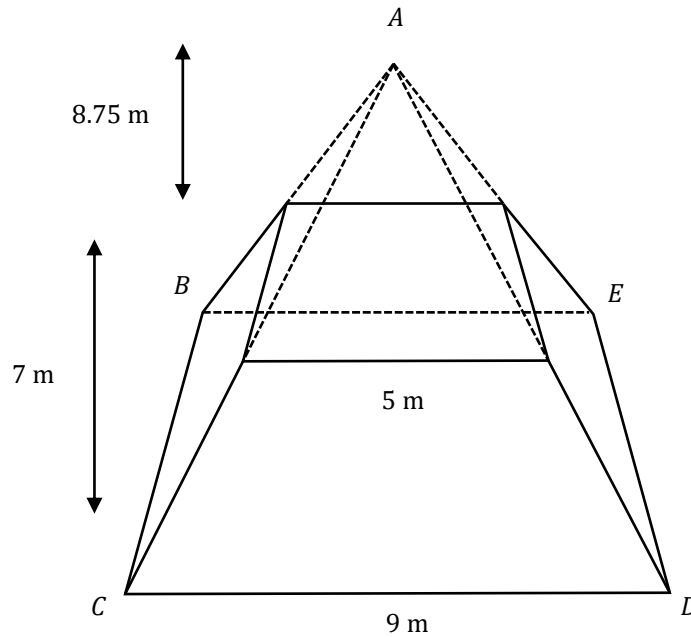Answer _____ cm^2

Turn over for next question

3   A frustum is cut from a square based pyramid as shown below.

The height of the frustum is 7 m

The height of the pyramid on top of the frustum is 8.75 m

The large square base is 9 m wide.

The square top is 5 m wide.

Calculate the volume of the frustum.
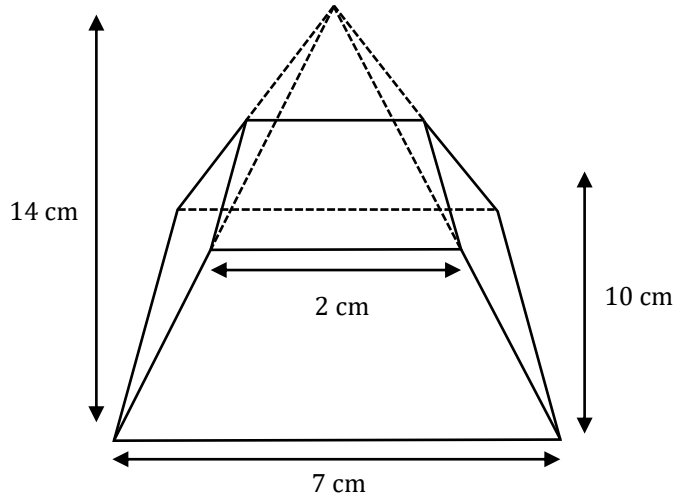
Give your answer to 2 decimal places.

[3 marks]

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Answer _____ m^3

Turn over for next question

3

Turn over ►

4 A section is cut from the top of a square-base pyramid of height 14 cm to create a frustum as shown below.

The base of the frustum has a width of 7 cm.

The top of the frustum has a width of 2 cm.

Calculate the volume of the frustum shown above.

[3 marks]

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Answer _____ cm^3

3

Turn over ▶

5 A cone with radius 7 cm and height 10 cm, has a smaller cone of radius 3 cm, cut from its top.
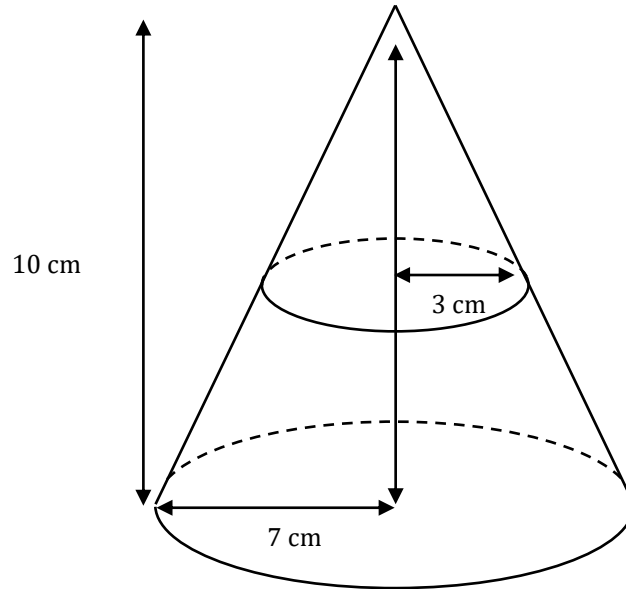
Find the height of the frustum after the smaller cone is removed.
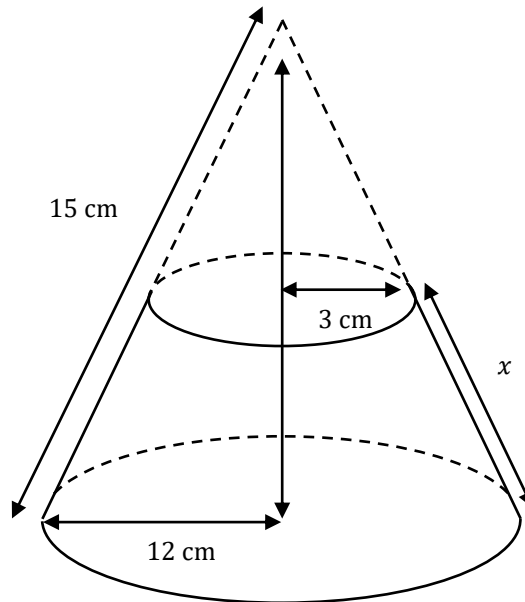
Give your answer to 2 decimal places.

[3 marks]

Answer _____ cm

Turn over for next question

6 A cone has a radius of 12 m and a slanted height 15 m.

A smaller cone of radius 3 m is cut from its top.

x is the slanted height of the frustum remaining.

Find x

Give your answer to 2 decimal places.

[3 marks]
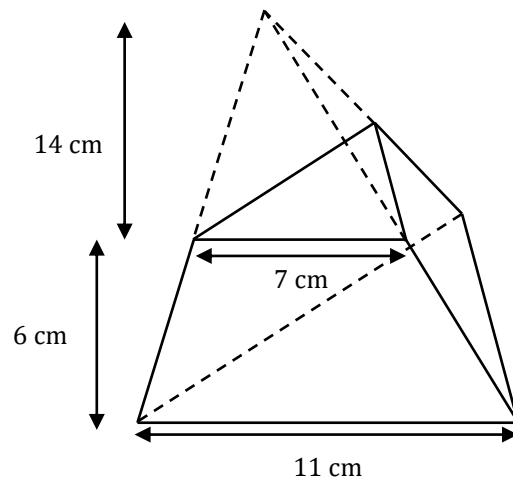
Answer _____ cm

Turn over for next question

7   A triangular pyramid is 20 cm tall.

The top is cut off leaving a 6 cm tall frustum.

The base of the pyramid is an equilateral triangle, with each length 11 cm.

The top of the frustum has a width of 7 cm.

Calculate the volume of the 6 cm tall frustum.

[4 marks]

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Answer _____ cm^3

End of Questions

4

END