

GCSE Mathematics

H

3D Trigonometry & Pythagoras

Higher Tier | Grades 8-9

Total Marks	Time	Questions
72	72 min	20

Instructions:

- Do not use a calculator when you see: 
- Answer all questions in the spaces provided.
- Show all your working - marks are awarded for method as well as final answers.
- Cross through any work you do not want to be marked.
- Check your answers if you have time at the end.

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Edexcel-style questions**Q1**

Grade 8

Edexcel style

The diagram shows a cuboid. Find the length of the diagonal AG. Give your answer correct to 3 significant figures.

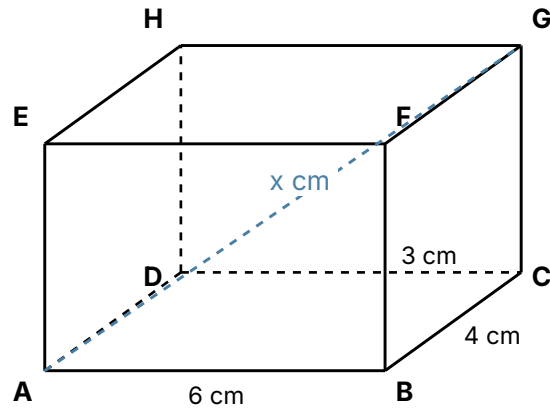


Diagram NOT accurately drawn

Answer _____

Q2

Grade 9

Edexcel style

The diagram shows a cuboid. Find the angle between the diagonal AG and the base ABCD (angle GAC). Give your answer correct to 1 decimal place.

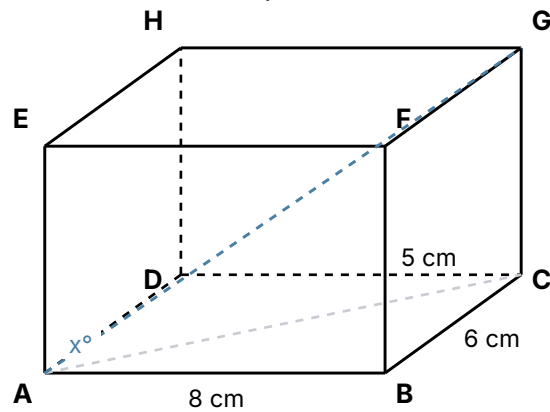


Diagram NOT accurately drawn

Answer _____

Q3

Grade 8

Edexcel style

The diagram shows a right pyramid with a square base ABCD and apex V. M is the centre of the base. Find the height VM of the pyramid. Give your answer correct to 3 significant figures.

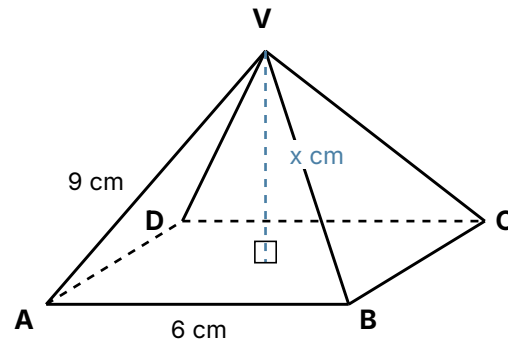


Diagram NOT accurately drawn

Answer _____

Q4

Grade 9

Edexcel style

The diagram shows a right pyramid with a square base ABCD and apex V. M is the centre of the base. Find the angle between the slant edge VA and the base (angle VAM). Give your answer correct to 1 decimal place.

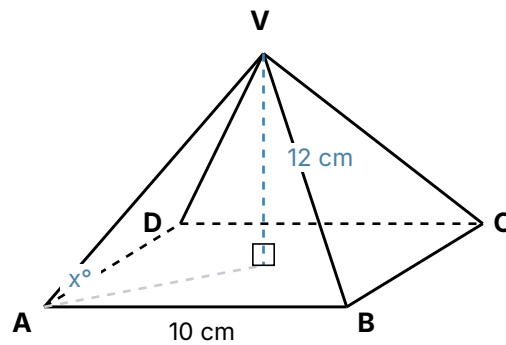


Diagram NOT accurately drawn

Answer _____

Q5

Grade 9

Edexcel style

A shipping container is in the shape of a cuboid. The base measures 12 m by 5 m, and the container is 8 m tall. Find the angle between the diagonal from a bottom corner to the opposite top corner, and the base of the container. Give your answer correct to 1 decimal place.

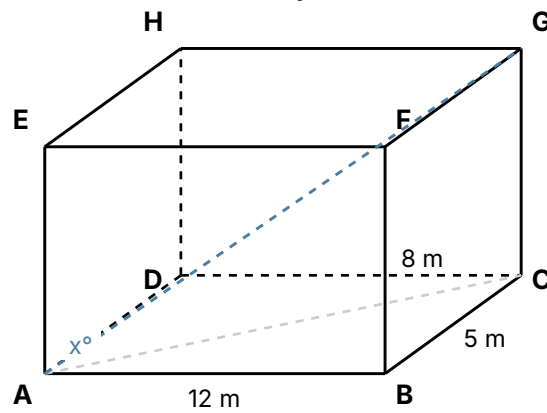


Diagram NOT accurately drawn

Answer _____

AQA-style questions**Q6**

Grade 8

AQA style

The diagram shows a cuboid. Find the length of the diagonal AG. Give your answer correct to 3 significant figures.

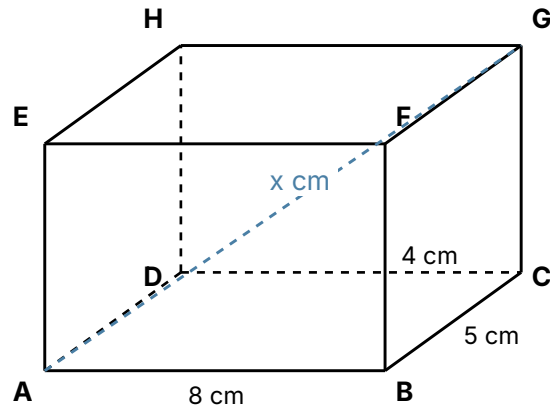


Diagram NOT accurately drawn

Answer _____

Q7

Grade 9

AQA style

The diagram shows a cuboid. Find the angle between the diagonal AG and the base ABCD (angle GAC). Give your answer correct to 1 decimal place.

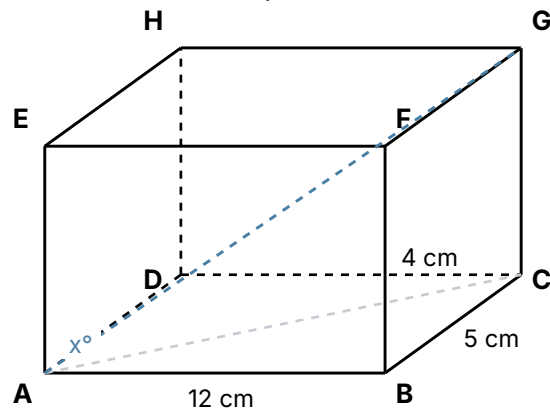


Diagram NOT accurately drawn

Answer _____

Q8

Grade 8

AQA style

The diagram shows a right pyramid with a square base ABCD and apex V. M is the centre of the base. Find the height VM of the pyramid. Give your answer correct to 3 significant figures.

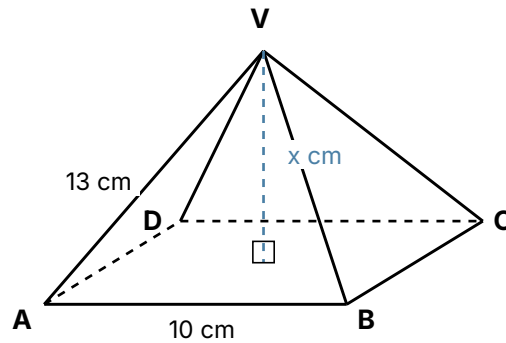


Diagram NOT accurately drawn

Answer _____

Q9

Grade 9

AQA style

The diagram shows a right pyramid with a square base ABCD and apex V. M is the centre of the base. Find the angle between the slant edge VA and the base (angle VAM). Give your answer correct to 1 decimal place.

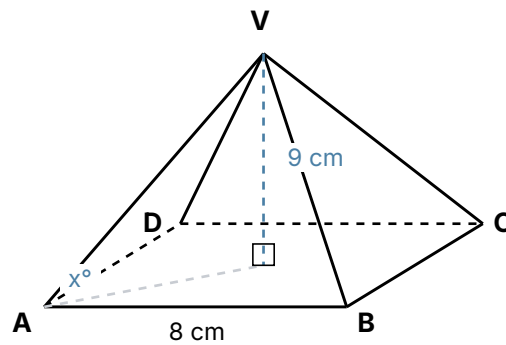


Diagram NOT accurately drawn

Answer _____

Q10

Grade 9

AQA style

A greenhouse is in the shape of a cuboid. The base measures 9 m by 12 m, and the greenhouse is 4 m tall. Find the angle between the diagonal from a bottom corner to the opposite top corner, and the base of the greenhouse. Give your answer correct to 1 decimal place.

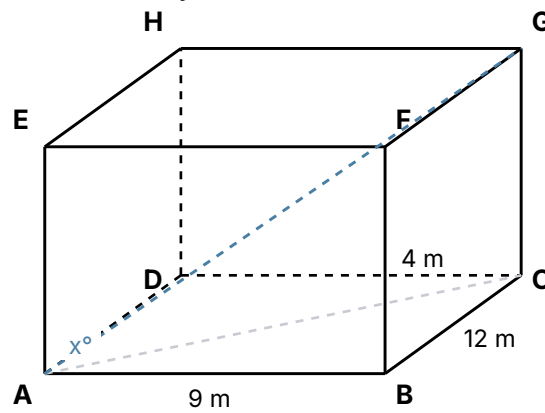


Diagram NOT accurately drawn

Answer _____

OCR-style questions

Q11

Grade 8

OCR style

The diagram shows a cuboid. Find the length of the diagonal AG.

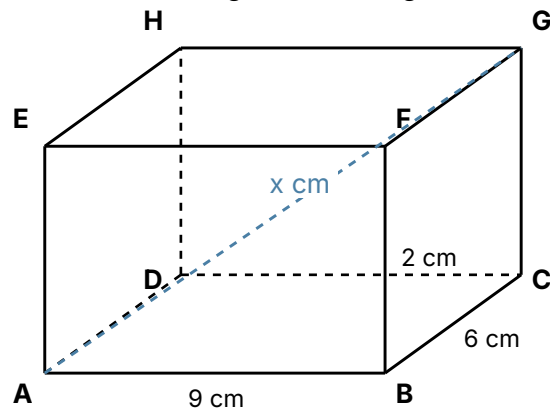


Diagram NOT accurately drawn

Answer _____

Q12

Grade 9

OCR style

The diagram shows a cuboid. Find the angle between the diagonal AG and the base ABCD (angle GAC). Give your answer correct to 1 decimal place.

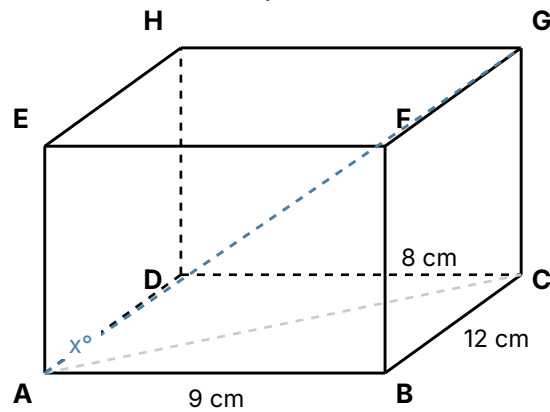


Diagram NOT accurately drawn

Answer _____

Q13

Grade 8

OCR style

The diagram shows a right pyramid with a square base ABCD and apex V. M is the centre of the base. Find the height VM of the pyramid. Give your answer correct to 3 significant figures.

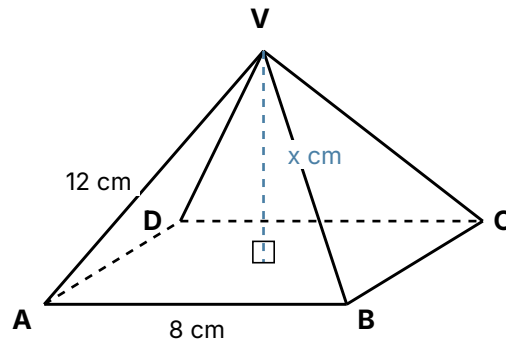


Diagram NOT accurately drawn

Answer _____

Q14

Grade 9

OCR style

The diagram shows a right pyramid with a square base ABCD and apex V. M is the centre of the base. Find the angle between the slant edge VA and the base (angle VAM). Give your answer correct to 1 decimal place.

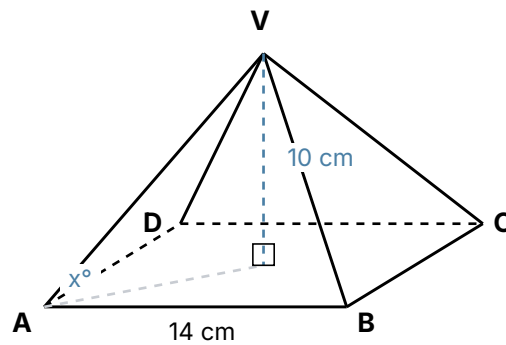


Diagram NOT accurately drawn

Answer _____

Q15

Grade 9

OCR style

A packing crate is in the shape of a cuboid. The base measures 15 m by 8 m, and the crate is 6 m tall. Find the angle between the diagonal from a bottom corner to the opposite top corner, and the base of the crate. Give your answer correct to 1 decimal place.

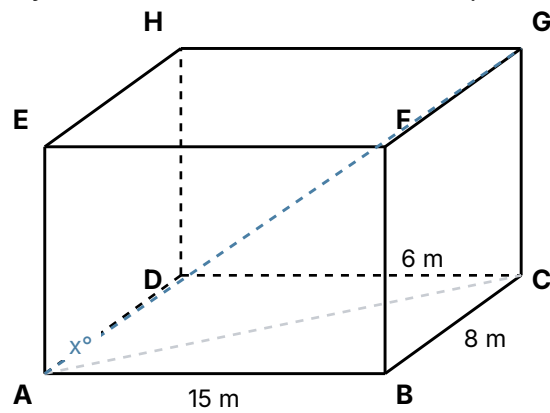


Diagram NOT accurately drawn

Answer _____

Teachably-style questions**Q16**

Grade 8

Teachably style

The diagram shows a cuboid. Find the length of the diagonal AG. Give your answer correct to 3 significant figures.

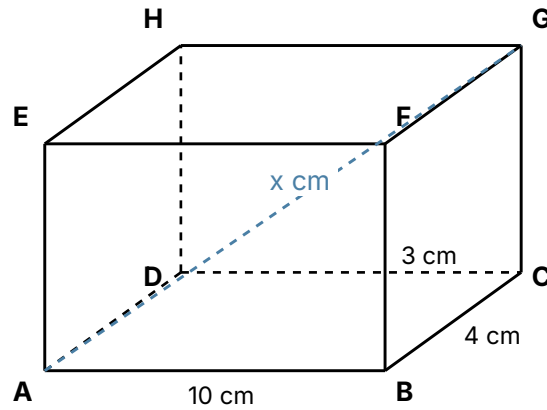


Diagram NOT accurately drawn

Answer _____

teachably

[3 marks]

Q17

Grade 9

Teachably style

The diagram shows a cuboid. Find the angle between the diagonal AG and the base ABCD (angle GAC). Give your answer correct to 1 decimal place.

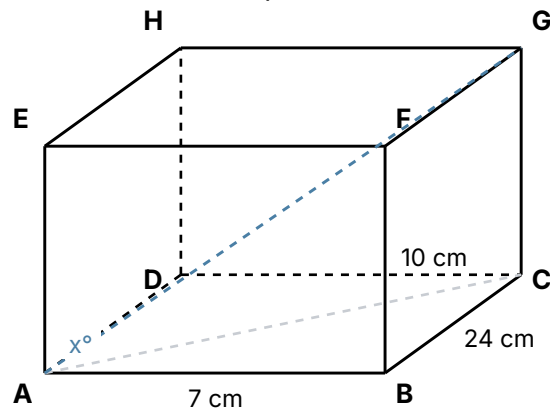


Diagram NOT accurately drawn

Answer _____

Q18

Grade 8

Teachably style

The diagram shows a right pyramid with a square base ABCD and apex V. M is the centre of the base. Find the height VM of the pyramid. Give your answer correct to 3 significant figures.

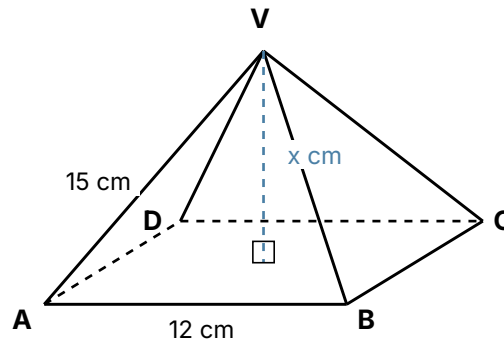


Diagram NOT accurately drawn

Answer _____

Q19

Grade 9

Teachably style

The diagram shows a right pyramid with a square base ABCD and apex V. M is the centre of the base. Find the angle between the slant edge VA and the base (angle VAM). Give your answer correct to 1 decimal place.

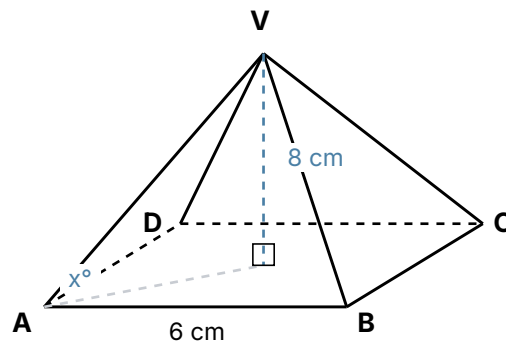


Diagram NOT accurately drawn

Answer _____

Q20

Grade 9

Teachably style

A warehouse is in the shape of a cuboid. The base measures 21 m by 20 m, and the warehouse is 10 m tall. Find the angle between the diagonal from a bottom corner to the opposite top corner, and the base of the warehouse. Give your answer correct to 1 decimal place.

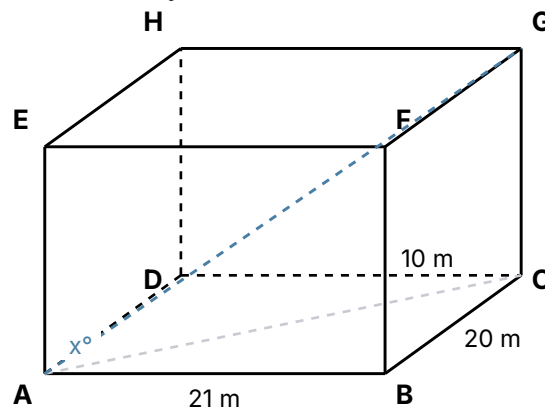


Diagram NOT accurately drawn

Answer _____

teachably

[4 marks]

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