HIGHER

# 7.15 3d Pythagoras and Trigonometry: 10-minute Pack

EDEXCEL 1MA1 · Calculator allowed · about 10 minutes

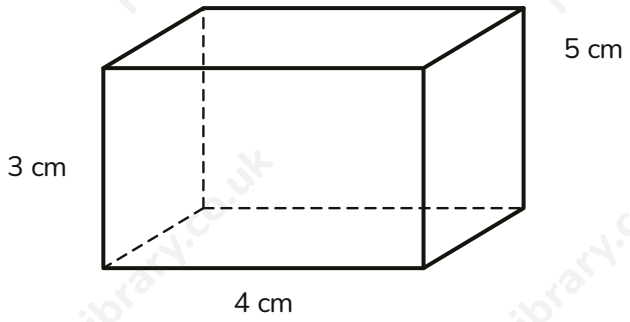
Total Marks

Name: _____ Date: ____ / ____ / _____

**Answer ALL questions. Show all your working.**

**1** A cuboid has dimensions 3 cm by 4 cm by 5 cm. Calculate the length of the diagonal of the cuboid, giving your answer to 3 significant figures.

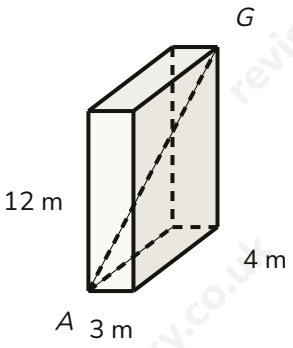
Diagram NOT accurately drawn




**(Total for Question 1 is 3 marks)**


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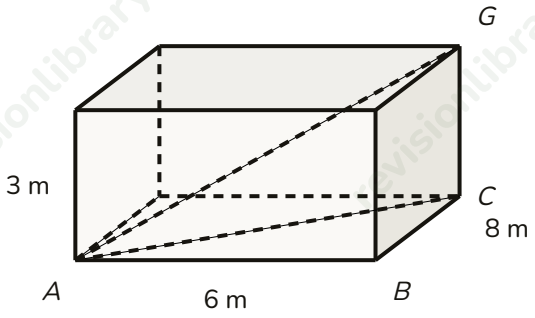
**2** A cuboid measures 3 m by 4 m by 12 m. Work out the length of the space diagonal from one corner to the opposite corner.




**(Total for Question 2 is 2 marks)**

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**3** A cuboid has base sides 6 m and 8 m and height 3 m. Find the angle between the space diagonal and the base plane. Give your answer to 1 decimal place.




**(Total for Question 3 is 3 marks)**


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# Mark scheme · 7.15 3d Pythagoras and Trigonometry: 10-minute Pack

## Question 1

| | |
|---|---|
| $\sqrt{3^2 + 4^2 + 5^2}$ | **M1** |
| $\sqrt{50}$ evaluated | **M1** |
| awrt 7.07 cm | **A1** |

**Answer: 7.07 cm (3 s.f.)**

## Question 2

| | |
|---|---|
| use 3D Pythagoras: $\sqrt{3^2 + 4^2 + 12^2}$ or equivalent method | **M1** |
| 13 m cao | **A1** |

**Answer: 13 m**

## Question 3

| | |
|---|---|
| calculate base diagonal = $\sqrt{6^2 + 8^2}$ = 10 m | **M1** |
| use tan(θ) = height / base diagonal = 3/10 oe | **M1** |
| 16.7 degrees awrt | **A1** |

**Answer: 16.7 degrees (awrt)**


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