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National 5 Maths
3D Pythagoras

SQA past paper and specimen paper questions and answers by topic

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National 5 Maths
SQA 2016 Paper 1
Question 7

National 5 Maths
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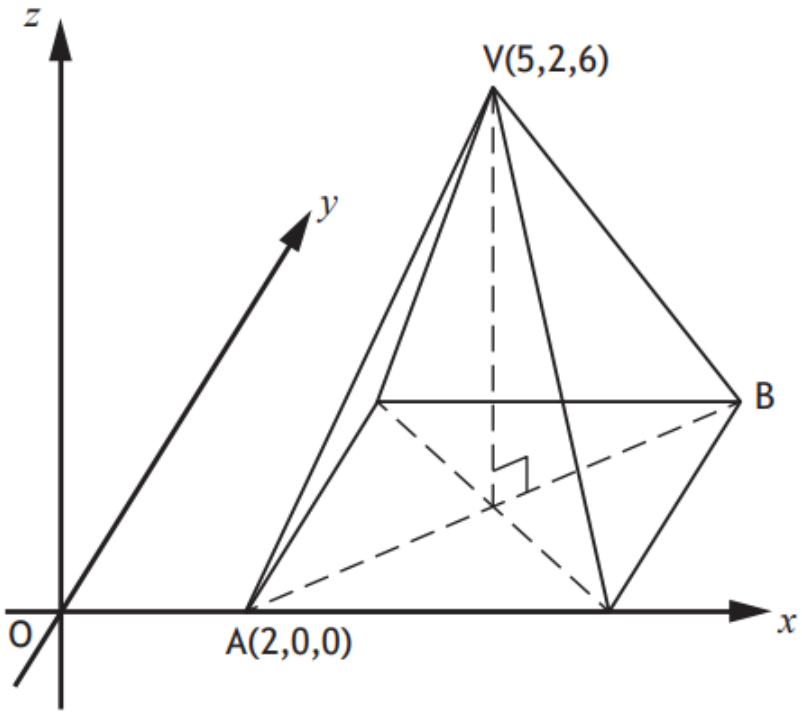
The diagram shows a rectangular based pyramid, relative to the coordinate axes.



- A is the point (2,0,0).
- V is the point (5,2,6).

(a) Write down the coordinates of B. **1**

(b) Calculate the length of edge AV of the pyramid. **3**

Answers:

(a) B(8, 4, 0)

(b) 7

National 5 Maths
SQA 2018 Paper 2
Question 16

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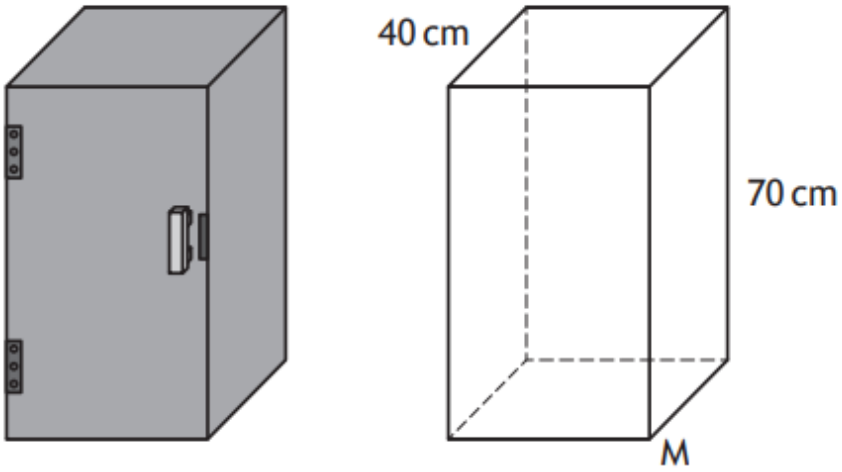
Chris wants to store his umbrella in a locker.

The locker is a cuboid with internal dimensions of length 40 centimetres, breadth 40 centimetres and height 70 centimetres.



The umbrella is 85 centimetres long.

He thinks it will fit into the locker from corner P to corner M.

Is he correct?

Justify your answer. 4

Answer:

Space diagonal = 90 cm

The SQA's marking instructions say: "Yes, since 85 < 90."

However, we think that this question was flawed. It wasn't simply asking whether or not the umbrella will fit into the locker. It was asking whether the umbrella will fit "from corner P to corner M", which it will not, because it is too short to reach all the way from P to M. So we would have answered: "No, because the umbrella is shorter than the space diagonal, so it will not reach from corner P to corner M."

National 5 Maths
SQA 2022 Paper 2
Question 11

National 5 Maths
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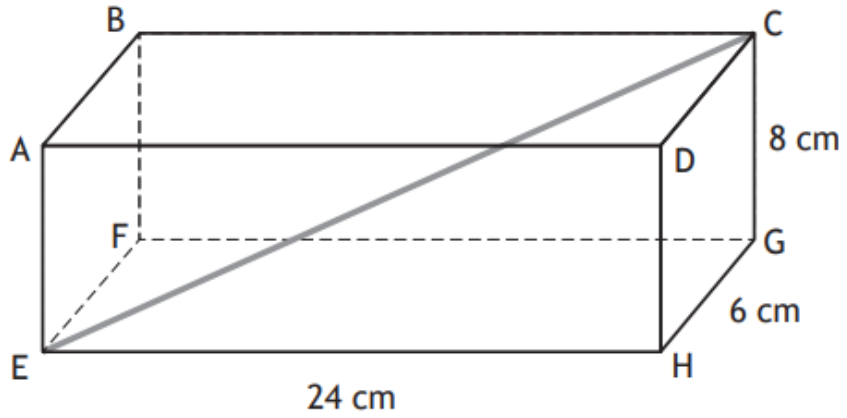
The diagram shows a cuboid, ABCDEFGH.



- The length of the cuboid, EH, is 24 centimetres.
- The breadth of the cuboid, HG, is 6 centimetres.
- The height of the cuboid, CG, is 8 centimetres.

Calculate the length of EC, the space diagonal of the cuboid. **3**

Answer:

26 cm