

Name:

Date:

# 3D Pythagoras

## GCSE

Edexcel

Mathematics

Grade (9-1)

Mark

Score (%)

— 25
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### Materials

For this paper you must have:

- Ruler
- Pencil, Rubber, Protractor and Compass
- Scientific calculator, which you are expected to use when appropriate

### Instructions

- Answer all questions
- Answer questions in the space provided
- All working must be shown
- Do all rough work in this book. Cross out any rough work you don't want to be marked

### Information

- The marks for the questions are shown in brackets

1

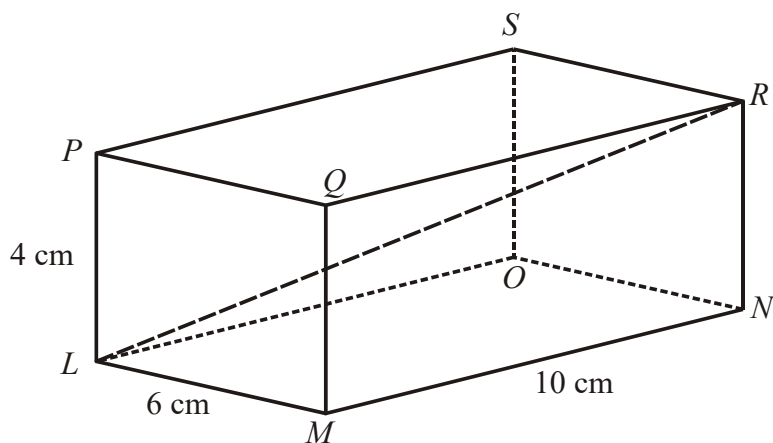


Diagram **NOT** accurately drawn

The diagram represents a cuboid  $LMNOPQRS$ .

$LM = 6 \text{ cm}$ .

$MN = 10 \text{ cm}$ .

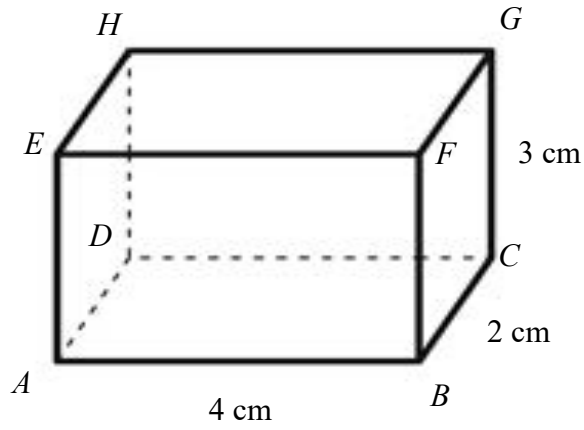
$LP = 4 \text{ cm}$ .

Calculate the length of  $LR$ .

Give your answer correct to 3 significant figures.

.....  
 (Total for question 1 is 3 marks)

2 Shown below is a cuboid

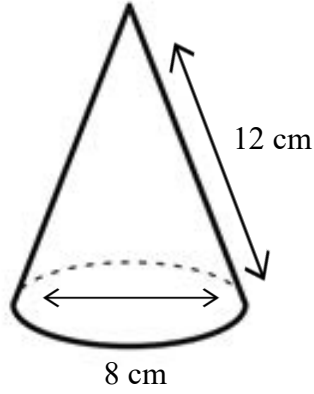


Calculate the length of diagonal  $BH$ .  
Give your answer as a surd.

(Total for question 2 is 4 marks)



3



Volume of cone =  $\frac{1}{3}\pi r^2 h$

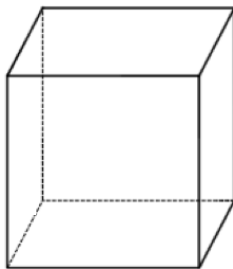
Curved surface area of cone =  $\pi r l$

A diagram of a cone with labels: 'r' for the radius of the base, 'h' for the vertical height, and 'l' for the slant height.

Calculate the volume of the cone to 2 significant figures.

.....cm<sup>3</sup>  
**(Total for question 3 is 3 marks)**

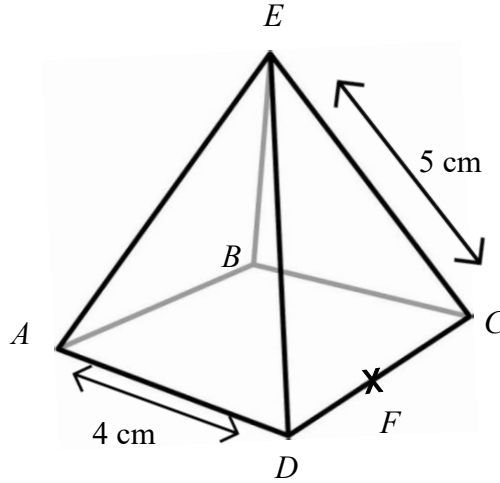
4 Shown is a cube with side length 5cm.



Calculate the length AG.  
 Give your answer as a surd.

.....cm  
**(Total for question 4 is 3 marks)**

5 Shown is a square based pyramid,  $ABCDE$ .



$F$  is the midpoint of  $CD$   
 $AD = 4\text{cm}$  and  $CE = 5\text{cm}$

Calculate the length of:

(a)  $BD$  to 1 decimal place.

.....cm  
(2)

(b)  $EF$  to 2 decimal places.

.....cm  
(4)

(Total for question 5 is 6 marks)

6 A cuboid has length 4 cm, width 5 cm and height 15 cm.

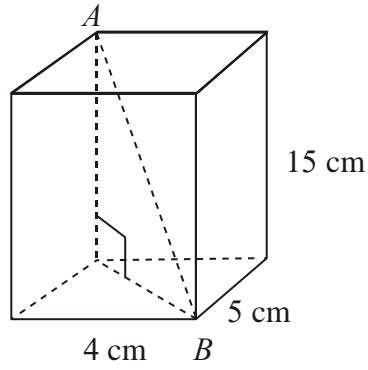


Diagram **NOT** accurately drawn

Work out the length of  $AB$  to 3 significant figures.

.....cm

(Total for question 6 is 3 marks)

- 7 The diagram shows a pyramid.  
 The apex of the pyramid is V.  
 Each of the sloping edges is of length 8 cm.

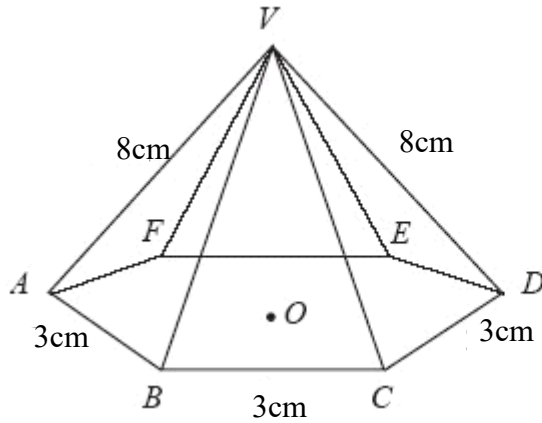


Diagram NOT accurately drawn

The base of the pyramid is a regular hexagon with sides of length 3 cm.  
 O is the centre of the base.

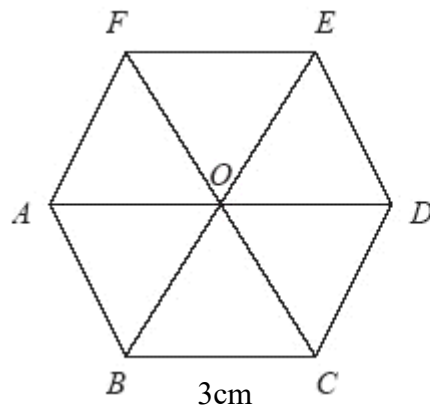


Diagram NOT accurately drawn

Calculate the height of V above the base of the pyramid.  
 Give your answer correct to 3 significant figures.

.....cm

(Total for question 7 is 3 marks)