

Name:

Exam Style Questions

## 3D Pythagoras



Equipment needed: Pen, Calculator, Ruler

### Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

[www.corbettmaths.com/contents](http://www.corbettmaths.com/contents)

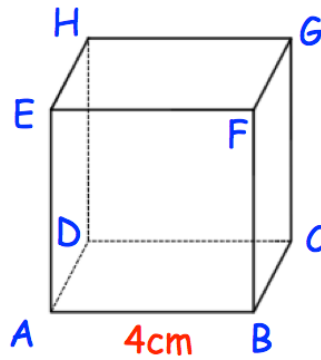
Video 259



Answers and Video Solutions



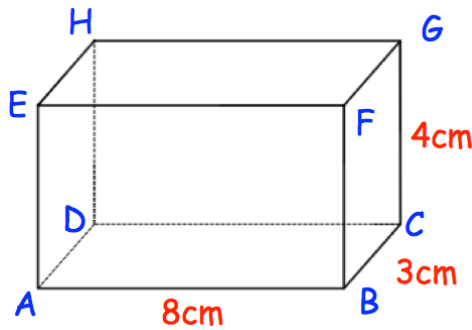
1. Shown is a cube with side length 4cm.



Calculate the length AG

.....cm  
(3)

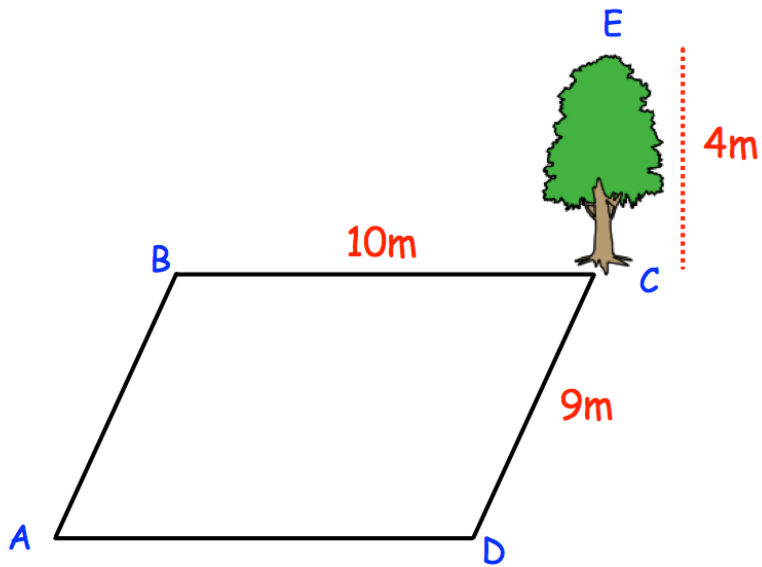
2. Shown below is a cuboid.  
AB = 8cm, BC = 3cm and CG = 4cm



Find the length AG

.....cm  
(3)

3. A tree is located in the corner of a rectangular field.

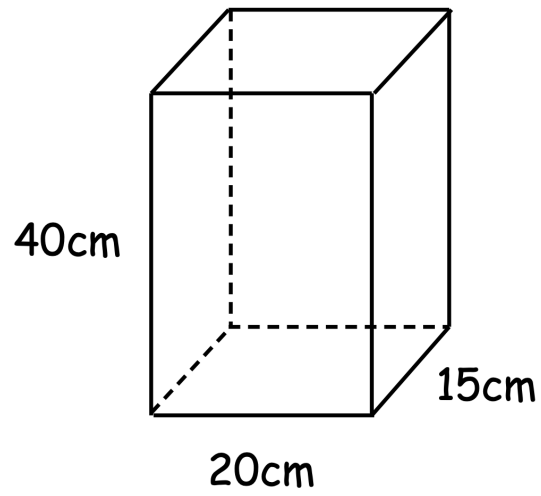


The field is 10 metres long and 9 metres wide.  
The tree is 4 metres tall.

Calculate the length AE

.....m  
(3)

4. Shown below is an open box.



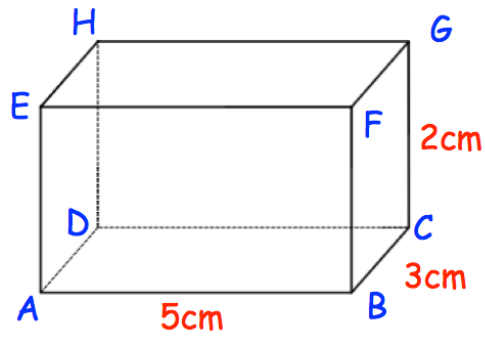
Tim wants to put a 46cm metal rod inside the box.

Will the metal rod fit inside the box?

Explain your answer.

(4)

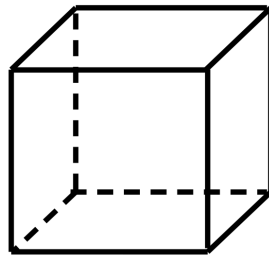
5. Shown below is a cuboid



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

.....cm  
(3)

6.

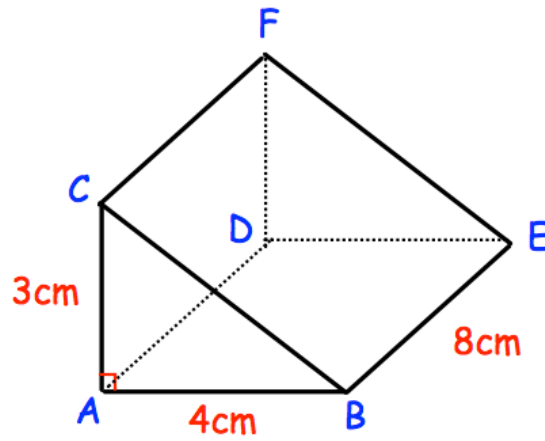


The surface area of a cube is  $433.5\text{cm}^2$

Find the length of the diagonal of the cube.

.....cm  
(3)

7. Shown below is a triangular prism.  
 Triangle ABC is a right angled triangle.



Find the length of

- (a) BC

.....cm  
 (2)

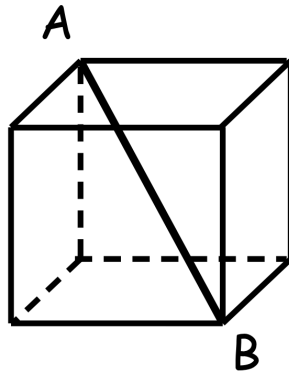
- (b) CD

.....cm  
 (2)

- (c) CE

.....cm  
 (2)

8. AB is the diagonal of a cube.

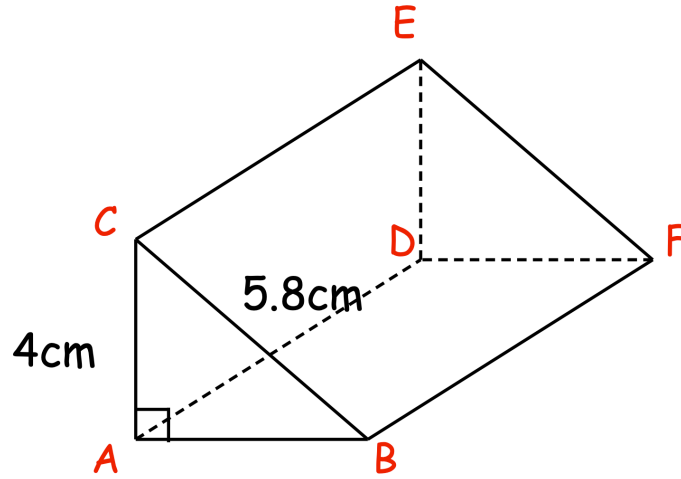


$AB = 8\text{cm}$

Work out the volume of the cube.

..... $\text{cm}^3$   
(4)

9. Shown below is a triangular prism.



$AC = 4\text{cm}$        $BC = 5.8\text{cm}$

The volume of the prism is  $151.2\text{cm}^3$

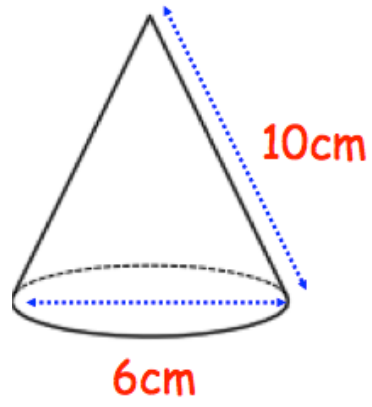
(a) Work out the length of BF

.....cm  
(3)

(a) Work out the length of BE

.....cm  
(2)

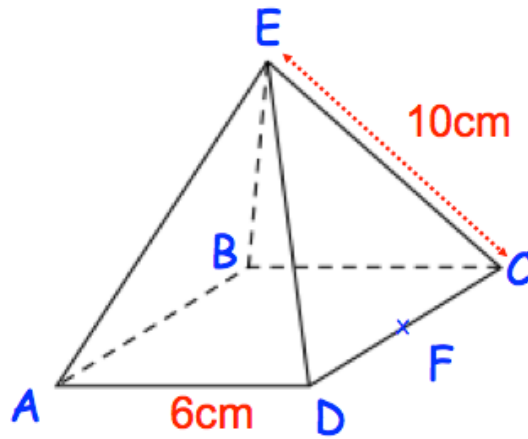
10.



Calculate the volume of the cone.

.....cm<sup>3</sup>  
(4)

11. Shown is a square based pyramid, ABCDE.



F is the midpoint of CD  
AD = 6cm and CE = 10cm

Calculate the length of

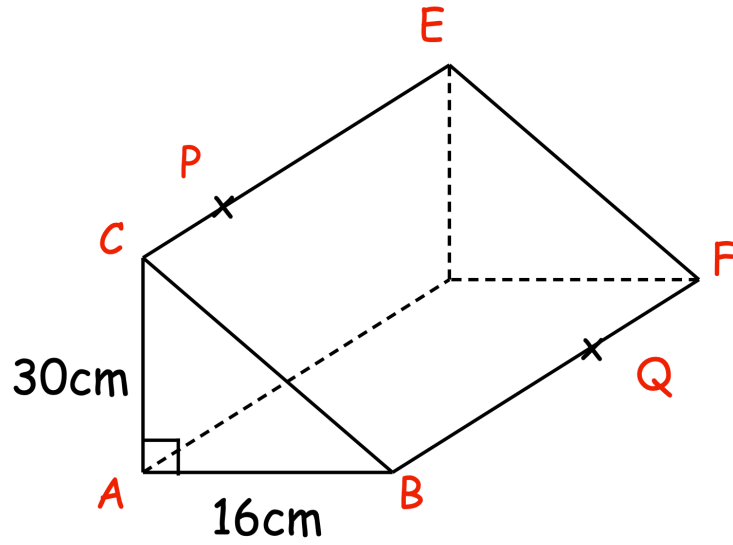
(a) BD

.....cm  
(2)

(b) EF

.....cm  
(4)

12. Shown below is a triangular prism.



$AB = 16\text{cm}$

$AC = 30\text{cm}$

$BF = 60\text{cm}$

P lies on CE such that  $CP : CE = 1 : 5$

Q lies on BF such that  $BQ : QF = 3 : 1$

Work out the length of PQ

.....cm  
(5)