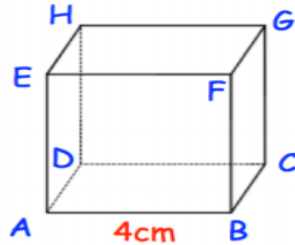## 3D Trigonometry and Pythagoras Past Paper Questions Edexcel Maths IGCSE Higher- Calculator

1.

Shown is a cube with side length 4cm.
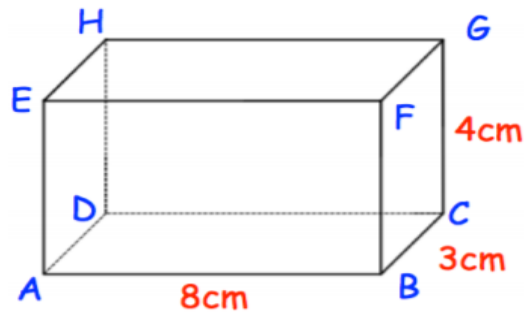

Calculate the length AG

...........................cm

(3)

2.

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

Find the length AG

.........................cm

(3)

3.

Shown below is a cuboid
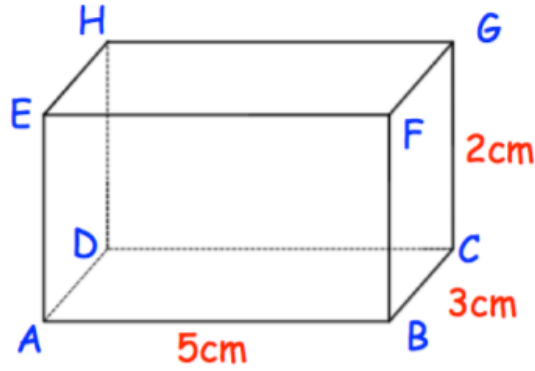
Calculate the length of diagonal BH.
Give your answer as a surd.

..........................cm

(3)

4.

Shown is a square based pyramid, ABCDE.
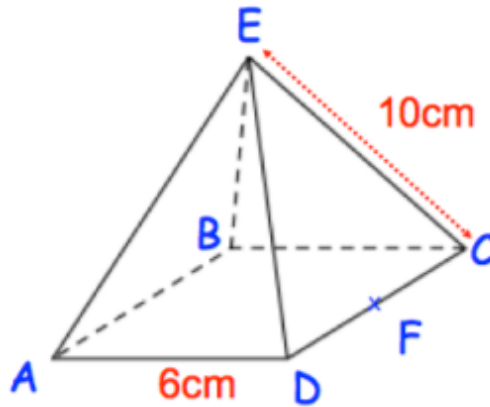
F is the midpoint of CD
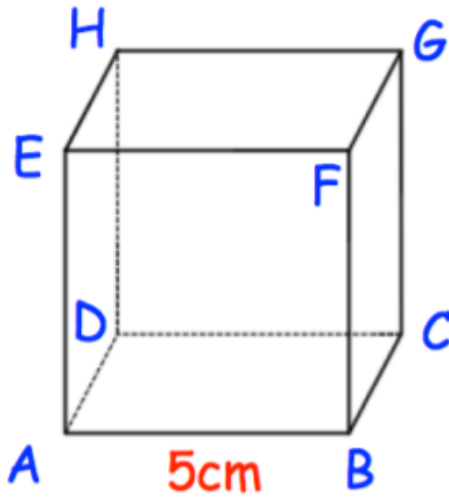AD = 6cm   and   CE = 10cm

Calculate the length of

(a) BD

...........................cm

(2)

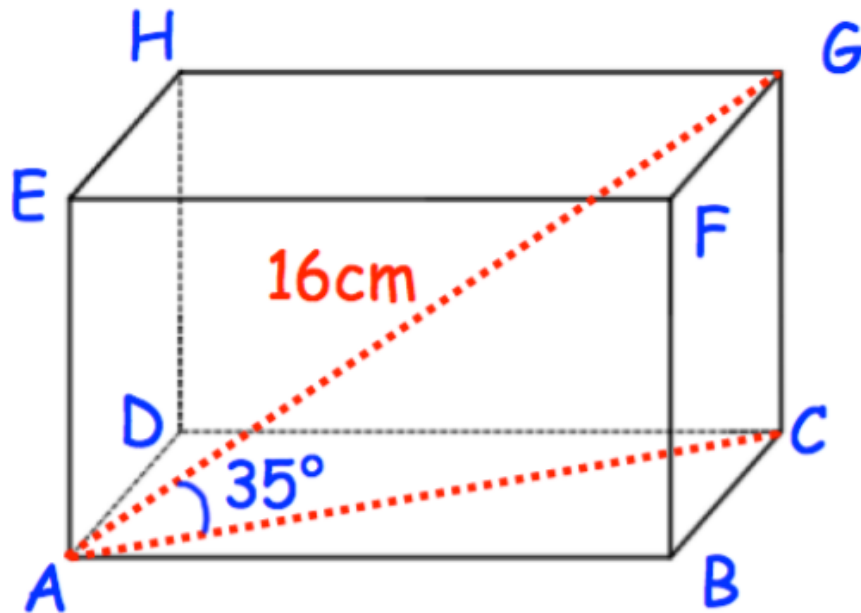(b) EF

...........................cm

(4)

5.

Shown is a cube with side length 5cm.

Calculate angle CAG.

6.

Shown below is a cuboid.
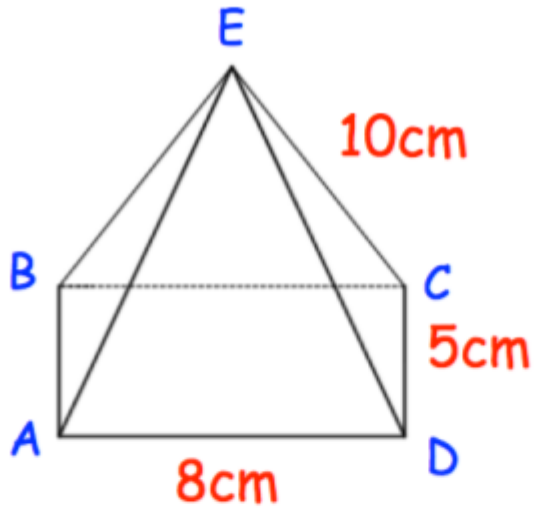

Length AG = 16cm
Angle CAG is 35°

Work out the length of EG.

7.

Shown below is a rectangular based pyramid.
The apex E is directly over the centre of the base.
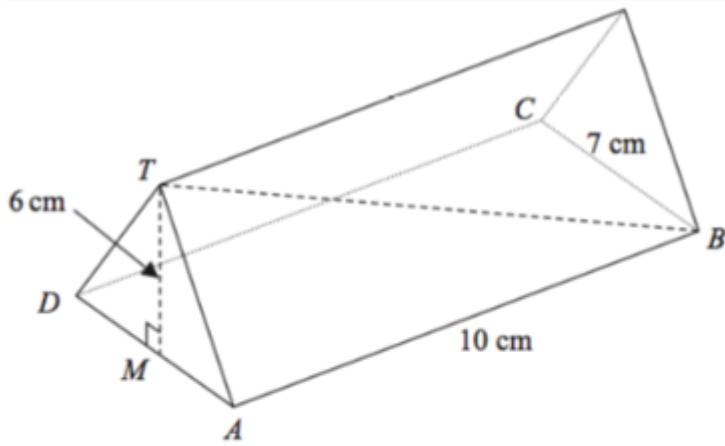

AD = 8cm
CD - 5cm
CE = 10cm

(a) Calculate the height of the pyramid

..........................cm

(4)

(b) Calculate angle between the face ABE and the base ABCD

..........................°

(3)

8.

[Edexcel IGCSE May2013-4H Q22]
The diagram shows a triangular prism with a
horizontal rectangular base *ABCD*.
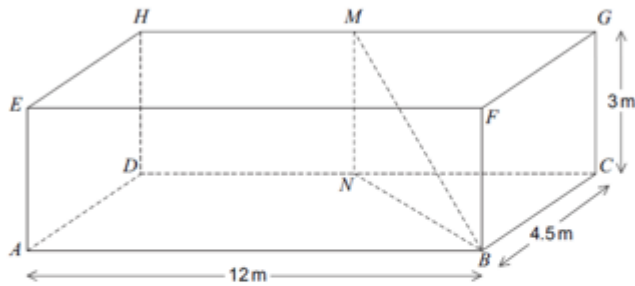*AB* = 10 cm. *BC* = 7 cm. *M* is the midpoint of *AD*.
The vertex *T* is vertically above *M*.
MT = 6 cm. Calculate the size of the angle
between *TB* and the base *ABCD*.
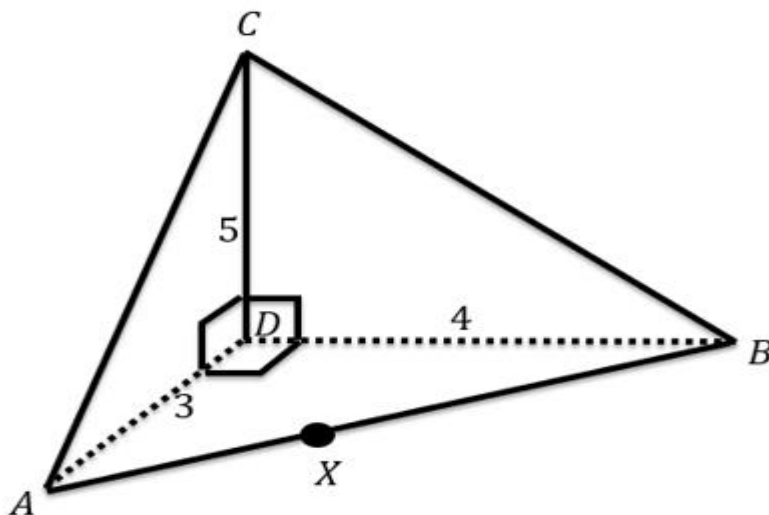Give your answer correct to 1 decimal place.

9.

. [AQA FM June 2013 Paper 2] $ABCDEFGH$ is a
cuboid. M is the midpoint of HG. N is the
midpoint of DC.

a) Show that $BN = 7.5$m
b) Work out the angle between the line MB
   and the plane $ABCD$.
c) Work out the **obtuse** angle between the
   planes MNB and $CDHG$.

10.

Determine the angle between the planes ABC
and ABD.

11.

. *(Knowledge of sine/cosine rules required)*
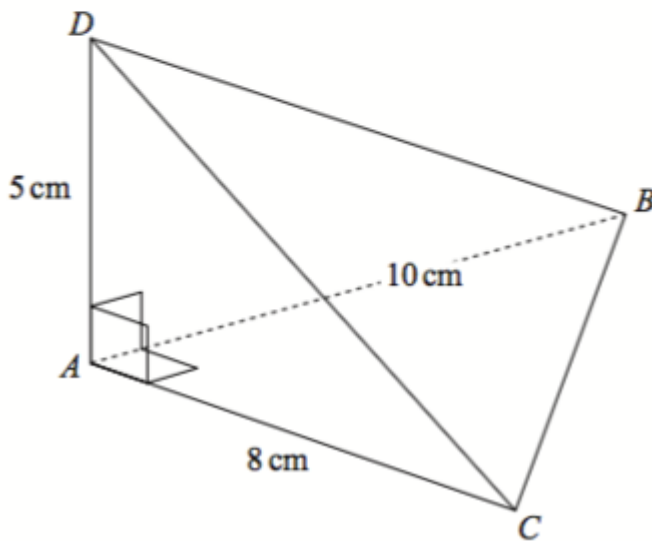*[Edexcel GCSE Nov2007-6H Q25]* The diagram
shows a tetrahedron.
AD is perpendicular to both AB and AC.
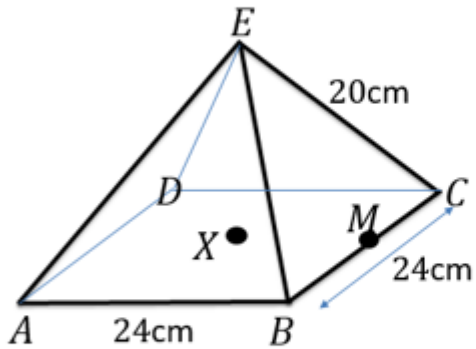AB = 10 cm. AC = 8 cm. AD = 5 cm.
Angle BAC = 90°.
Calculate the size of angle BDC.
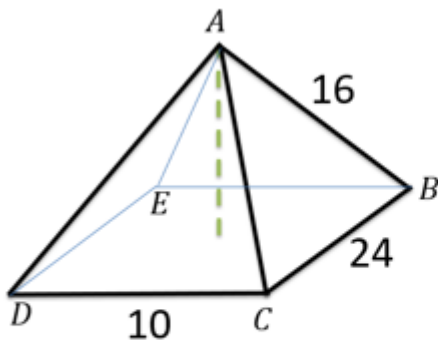Give your answer correct to 1 decimal place.

11.

A school buys a set of new 'extra comfort' chairs with its seats pyramid in shape. X is at the centre of the base of the pyramid, and M is the midpoint of BC.

a) By considering the triangle EBC, find the length EM. **16cm**

b) Hence determine the angle between the triangle EBC and the plane $ABCD$.

12.

(a) Determine the height of the pyramid.
(b) Determine the angle between the line AB and the base $BCDE$ of the pyramid.