Name:

Exam Style Questions

3D Trigonometry

Corbettmaths

Equipment needed: Pen, Calculator, Ruler, Pencil

Guidance

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

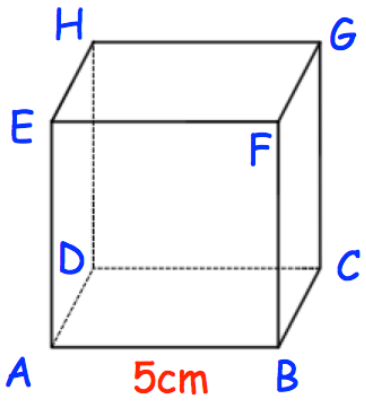
Video Tutorial

www.corbettmaths.com/contents

Video 332

Answers and Video Solutions

1. Shown is a cube with side length 5cm.

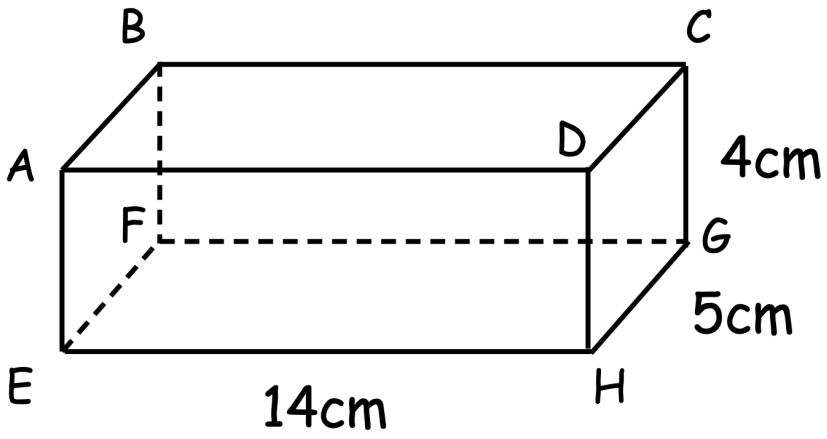


Calculate angle CAG.

.....°

(4)

2. Shown below is a cuboid.

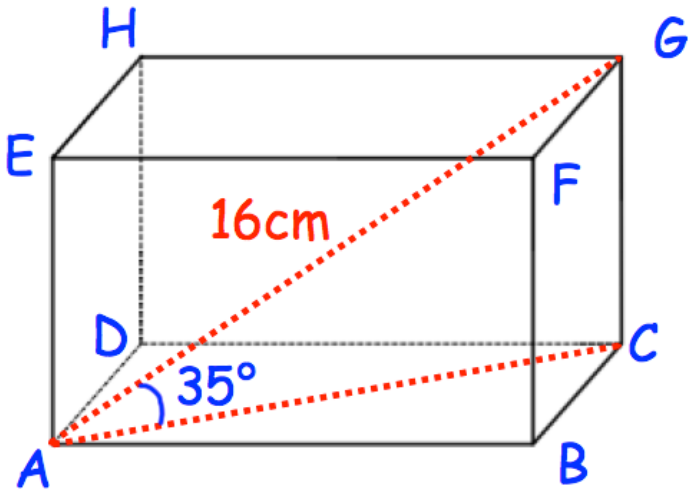


Calculate the size of angle CEG

.....°

(4)

3. Shown below is a cuboid.

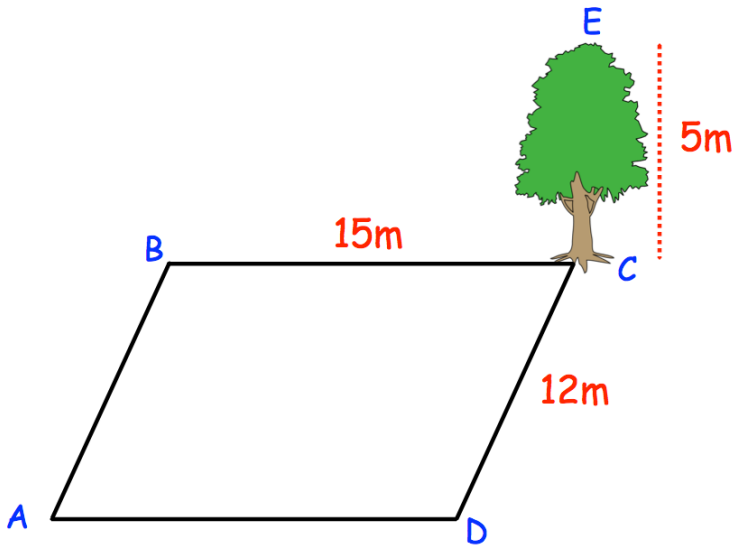


Length AG = 16cm
Angle CAG is 35°

Work out the length of EG.

.....cm
(3)

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



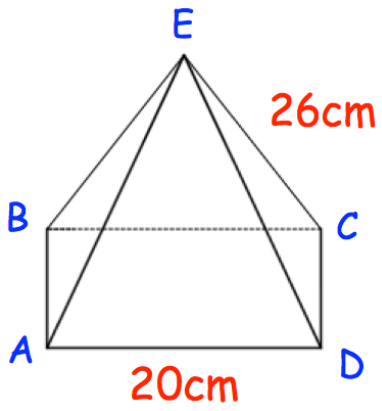
The field is 15 metres long and 12 metres wide.
The tree is 5 metres tall.

Calculate angle CAE.

.....°

(4)

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



AD = 20cm
CE = 26cm

(a) Work out the length of AC

.....cm
(2)

(b) Calculate angle CAE

..... °
(2)

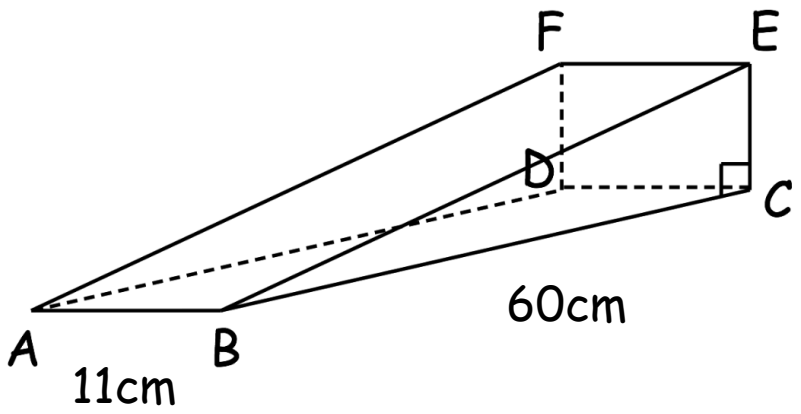
(c) Work out the height of the pyramid

.....cm
(2)

(d) Calculate the volume of the pyramid

.....cm^3
(2)

6. A triangular prism is shown below.



Angle CBE = 9°

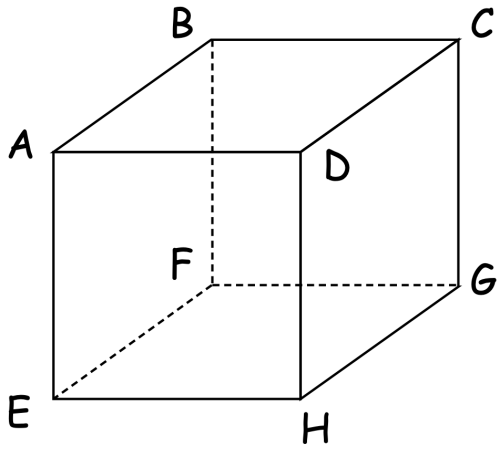
(a) Calculate the length of BE.

.....cm
(2)

(b) Calculate the length of BF.

.....cm
(2)

7. Shown below is a cuboid.



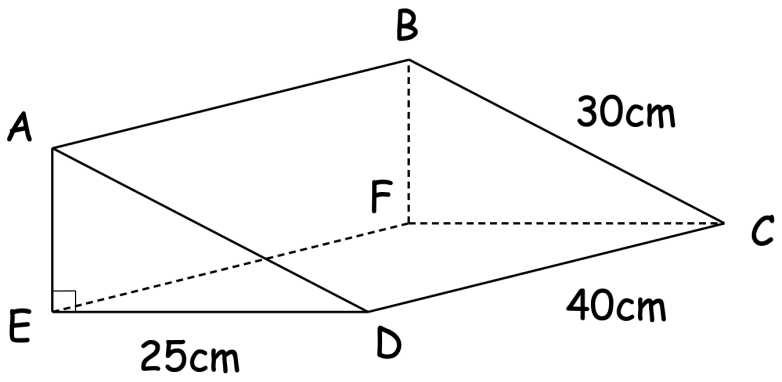
AE = 7cm
AG = 11.5cm

Work out the size of the angle between AG and plane EFGH.

.....°

(2)

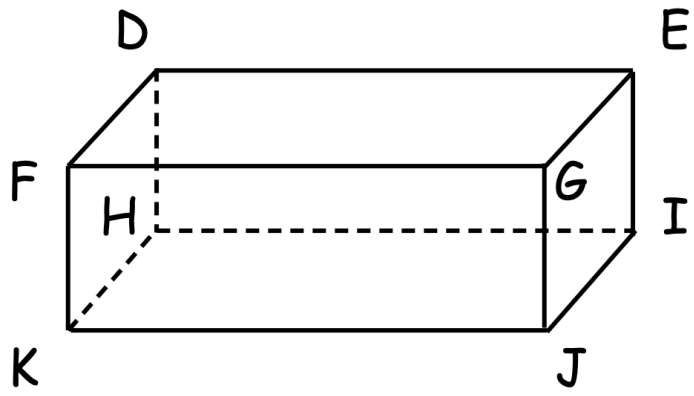
8. Here is a triangular prism.



Which angle is larger, angle ADE or angle ACE?
You must show your working.

(4)

9. Shown below is a cuboid.



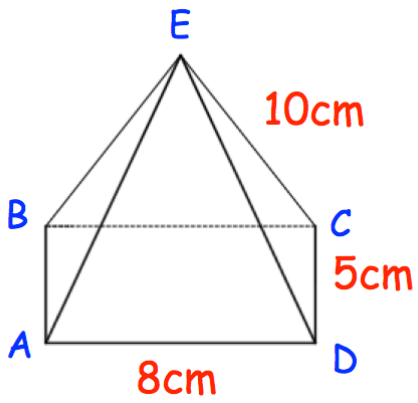
KJ = 24cm
KG = 25cm
Angle HIK = 19.5°

Calculate the size of angle KIF

.....°

(4)

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



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

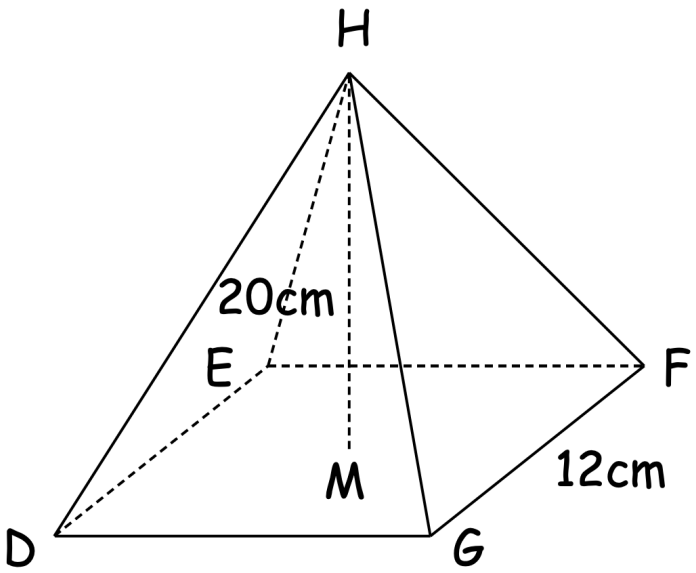
(a) Calculate the height of the pyramid

.....cm
(4)

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

..... °
(3)

11. Shown below is a square based pyramid.
The side length of the square is 12cm.
The perpendicular height of the pyramid is 20cm.



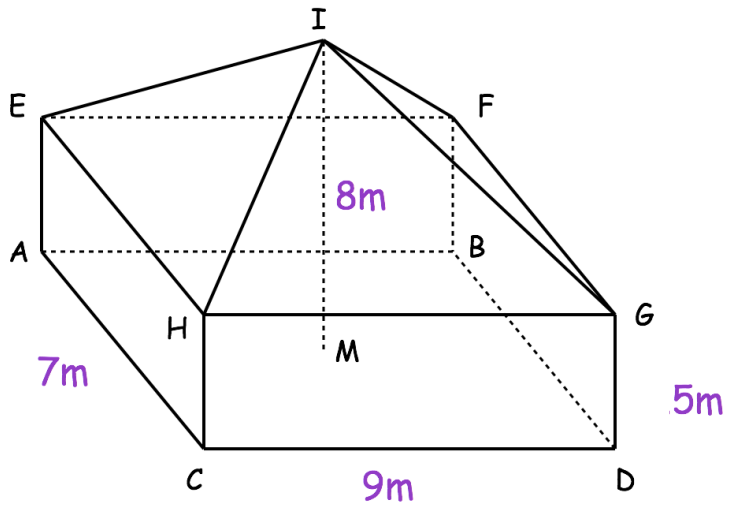
Work out the size of angle HFD.

..... °

(4)

12. The diagram shows a cuboid and a pyramid.

The apex of the pyramid, I, is directly above the centre, M, of ABDC.



(a) Calculate the angle between the line DI and the plane ABDC

……°

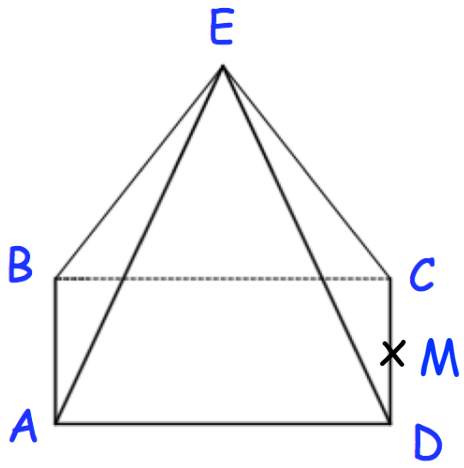
(3)

(b) Calculate the angle between planes EHI and ACHE

……°

(2)

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



AD = 9cm CD = 7cm CE = 12cm

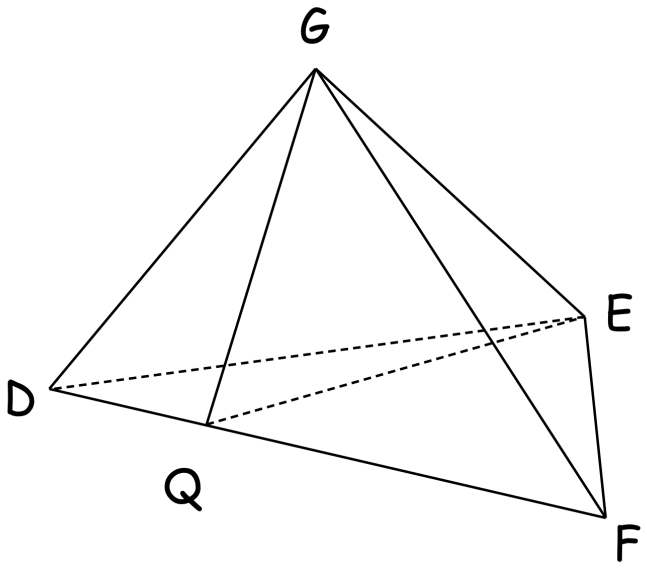
M is the midpoint of the line CD.

Work out the size of angle AME

..... °

(7)

14. DEFG is a triangular based pyramid.



Q is a point on DF.

GE = 6cm
Angle GEQ = 67°
Angle GQE = 72°

Work out the length of GQ.

.....cm
(3)