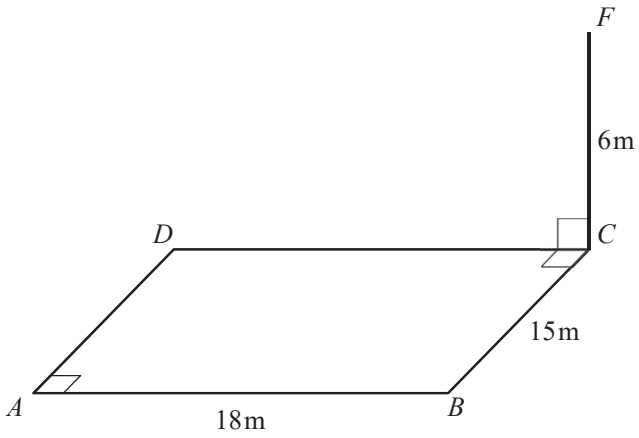
EXAM PAPERS PRACTICE

3D Pythagoras & SOHCAHTOA

Question Paper

Question 1



NOT TO SCALE

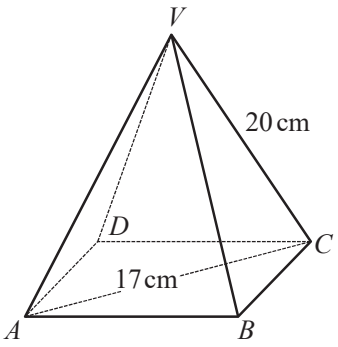
The diagram shows a rectangular playground $ABCD$ on horizontal ground.
A vertical flagpole CF, 6 metres high, stands in corner C.
$AB = 18$ m and $BC = 15$ m.

[4]

Calculate the angle of elevation of F from A.

Question 2

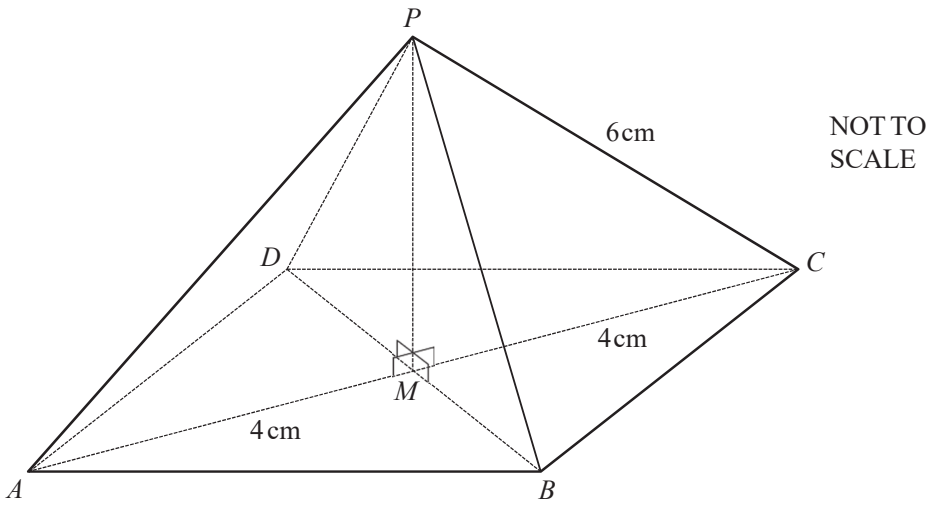
The diagram shows a pyramid with a square base $ABCD$.
All the sloping edges of the pyramid are 20 cm long and $AC = 17$ cm.



NOT TO SCALE

Calculate the height of the pyramid. [3]

Question 3



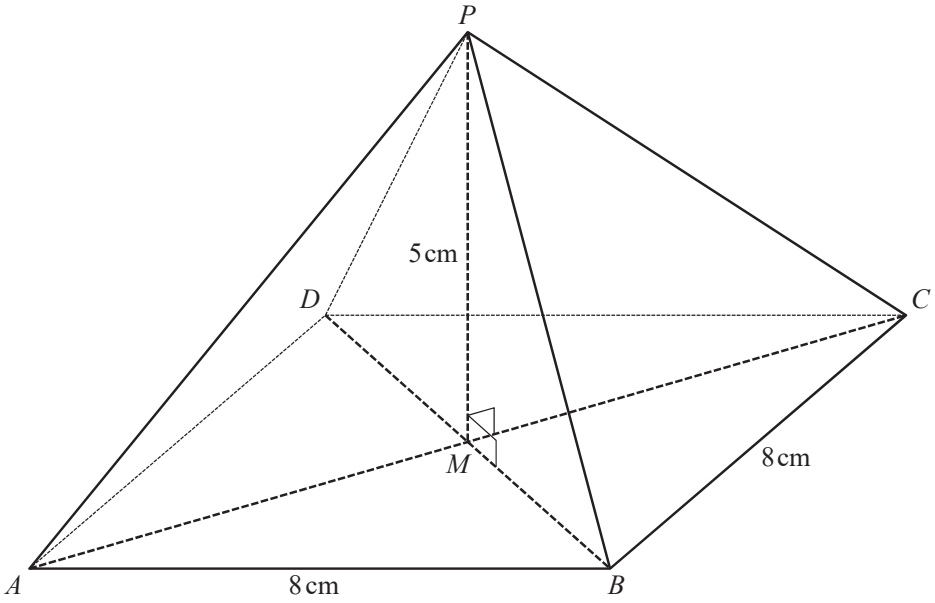
The diagram shows a pyramid on a square base $ABCD$ with diagonals, AC and BD, of length 8 cm.
AC and BD meet at M and the vertex, P, of the pyramid is vertically above M.
The sloping edges of the pyramid are of length 6 cm.

Calculate

(a) the perpendicular height, PM, of the pyramid, [3]

(b) the angle between a sloping edge and the base of the pyramid. [3]

Question 4



NOT TO SCALE

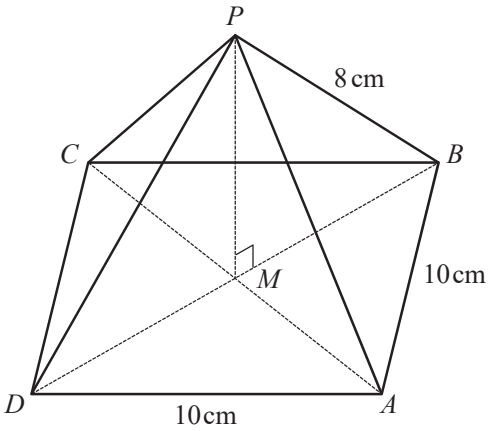
The diagram shows a pyramid on a square base $ABCD$.
The diagonals of the base, AC and BD, intersect at M.
The sides of the square are 8 cm and the vertical height of the pyramid, PM, is 5 cm.

Calculate

(a) the length of the edge PB, [3]

(b) the angle between PB and the base $ABCD$. [3]

Question 5



NOT TO SCALE

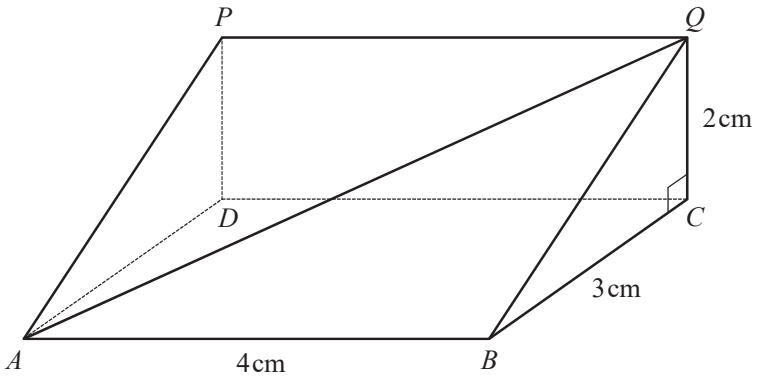
The diagram represents a pyramid with a square base of side 10 cm.

The diagonals AC and BD meet at M. P is vertically above M and $PB = 8$cm.

(a) Calculate the length of BD. [2]

(b) Calculate MP, the height of the pyramid. [3]

Question 6

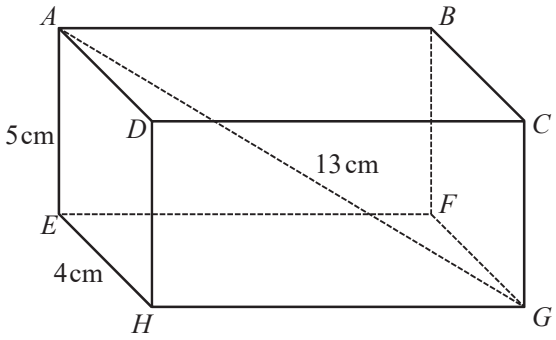


NOT TO SCALE

The diagram shows a prism of length 4 cm.
The cross section is a right-angled triangle.
$BC = 3$ cm and $CQ = 2$ cm.

Calculate the angle between the line AQ and the base, $ABCD$, of the prism. [4]

Question 7



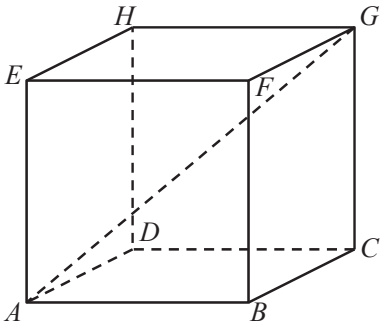
NOT TO SCALE

The diagram shows a cuboid $ABCDEFGH$.
$AE = 5$ cm, $EH = 4$ cm and $AG = 13$ cm.

Calculate the angle between the line AG and the base $EFGH$ of the cuboid. [3]

Question 8

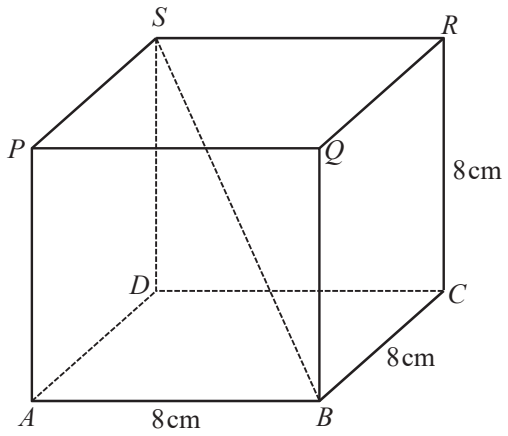
The diagram shows a cube $ABCDEFGH$ of side length 26 cm.



NOT TO SCALE

Calculate the angle between AG and the base of the cube. [4]

Question 9



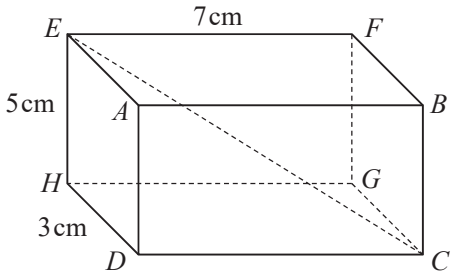
NOT TO SCALE

The diagram shows a cube of side length 8 cm.

(a) Calculate the length of the diagonal BS. [3]

(b) Calculate angle SBD. [2]

Question 10



NOT TO SCALE

The diagram shows a cuboid.
$HD = 3$ cm, $EH = 5$ cm and $EF = 7$ cm.

Calculate

(a) the length CE,

[4]

(b) the angle between CE and the base $CDHG$.

[3]