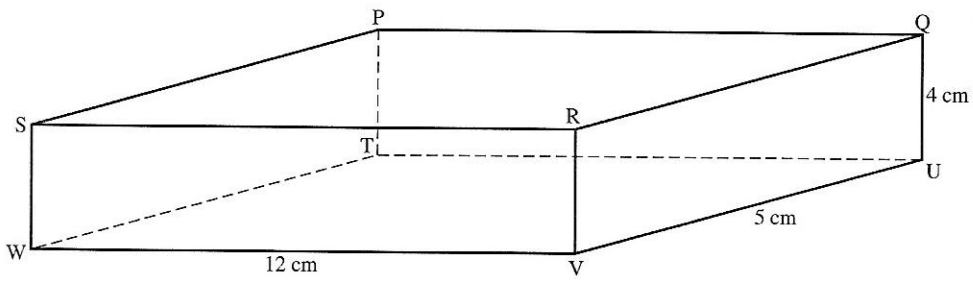
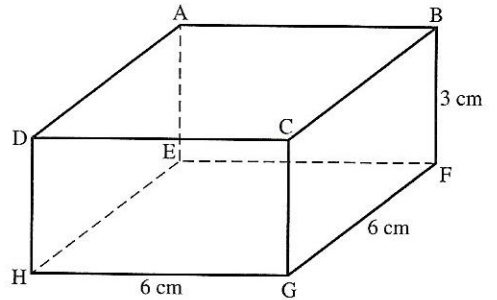


4

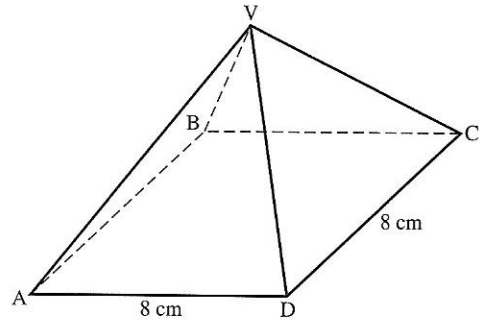


In the cuboid PQRSTUW calculate a) TV , b) PV , c) \widehat{VPT} , d) \widehat{PVW} , e) \widehat{VQW} .

- 5 In the cuboid ABCDEFGH calculate a) BD , b) DF , c) \widehat{BDF} , d) BG , e) \widehat{BGD} .

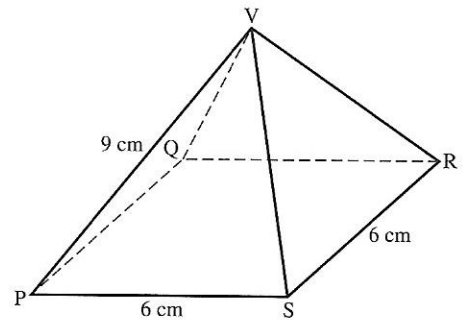


- 6 In the pyramid VABCD, the vertex V is at a height of 7 cm above the centre of the square base ABCD. Calculate a) AC , b) VA , c) \widehat{VAC} , d) \widehat{VDA} , e) the angle between the planes VAD and VCD.

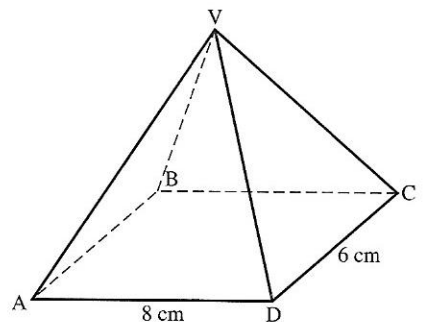


- 7 In the pyramid VPQRS, the vertex V is directly above the centre of the square base PQRS. Calculate

- PR
- the height of the pyramid
- \widehat{VPR}
- the angle between the planes VPS and VRQ
- the angle between the planes VPQ and VRQ.



- 8 In the pyramid VABCD, the vertex V is at a height of 12 cm above the centre of the rectangular base ABCD. Calculate a) AC , b) VA , c) \widehat{VAC} , d) \widehat{VDA} , e) the angle between the planes VAB and VCD.

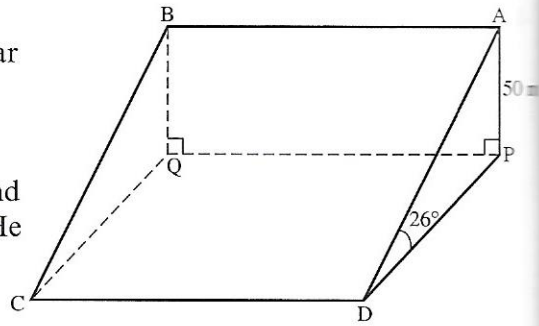


- 9 ABCD represents part of a uniform ski-slope which makes an angle of 26° with the horizontal rectangular plane CDPQ.

a) Calculate the distance AD.

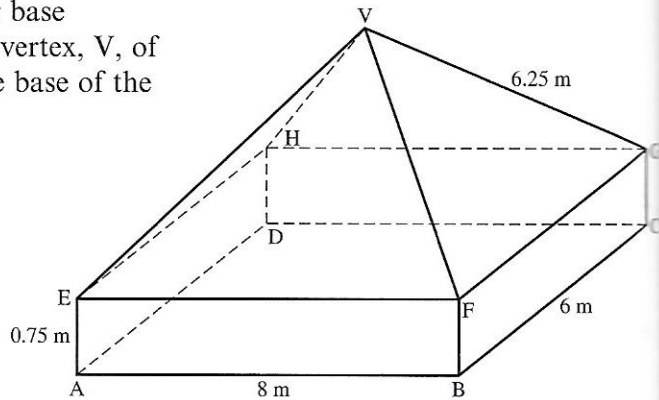
A beginner decides that the slope AD is too steep and is only prepared to risk an angle of descent of 10° . He achieves this by skiing directly from A to C.

- b) Calculate the distance AC,
c) Calculate the distance CD.



- 10 The diagram shows a tent with rectangular base ABCD, resting on horizontal ground. The vertex, V, of the tent is vertically above the centre of the base of the rectangle. Calculate

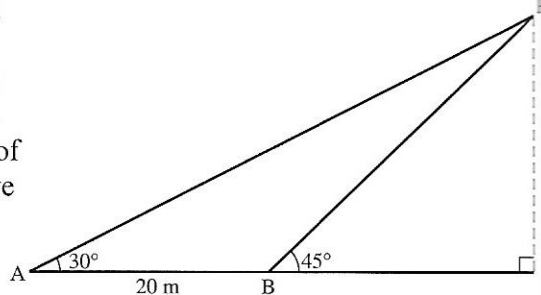
- a) the length EG
b) the height of V above the ground
c) the angle \widehat{VAC}
d) the angle between the planes VEH and VFG.



- 11 A hot-air balloon, B, is observed simultaneously from two points, P and Q, on horizontal ground. From P the bearing of B is 060° at an angle of elevation of 45° . From Q the bearing of B is 330° at an angle of elevation of 60° . The distance BQ is 800 m.

- a) Draw a sketch showing the positions of P, Q and B.
b) Calculate the height of the balloon above the ground.
c) Calculate the bearing of Q from P.

- 12 A surveyor is attempting to calculate the height of a point, P, on a building by taking measurements on horizontal, level ground. From a point A he records the angle of elevation of P as 30° . He then advances 20 m to a point B, from which he records the angle of elevation of P as 45° . Calculate the height of P above the ground.



- 13 A man is attempting to calculate the height of a kite, K, which is flying above horizontal ground. From a point A he records the angle of elevation of K as 23° . He then advances 80 m to a point B from which he records the angle of elevation of K as 34° . Calculate the height of the kite above the ground.