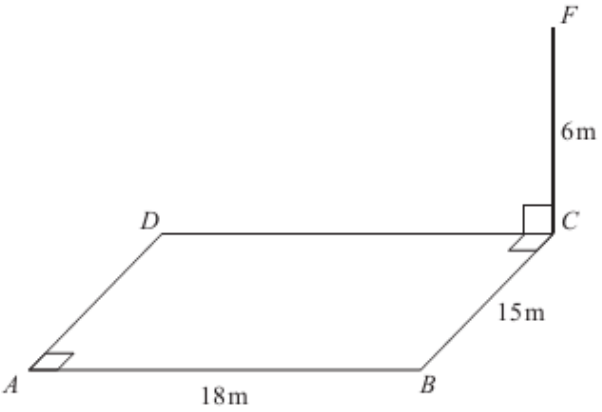
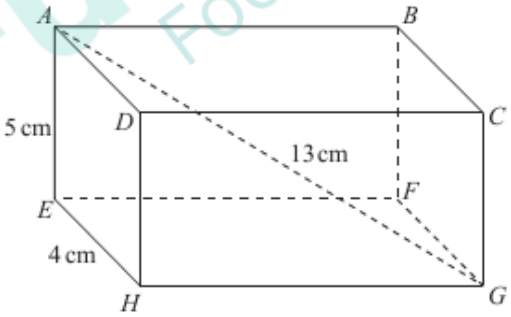
1. The diagram shows a rectangular playground ABCD on horizontal ground.
A vertical flagpole CF, 6 metres high, stands in corner C. AB= 18 m and BC= 15 m.



Calculate the angle of elevation of F from A.
0580/22/F/M/15 Q18)

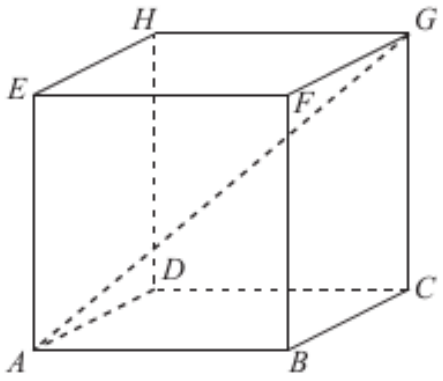
2. The diagram shows a cuboid ABCDEFGH.



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]
0580/21/M/J/17 Q13)

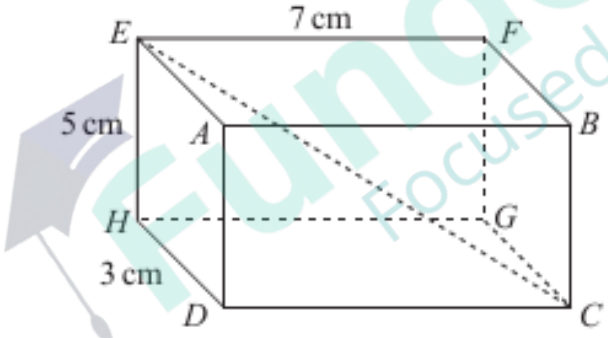
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3. The diagram shows a cube ABCDEFGH of side length 26 cm Calculate the angle between AG and the base of the cube. [4]



0580/23/M/J/17 Q22)

4. The diagram shows a cuboid.



HD= 3 cm, EH= 5 cm and EF= 7 cm.

Calculate

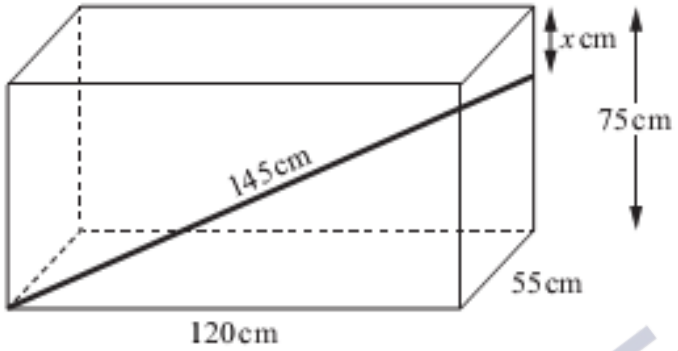
(a) the length CE, [4]

(b) the angle between CE and the base CDHG. [3]

0580/23/M/J/16 Q23)

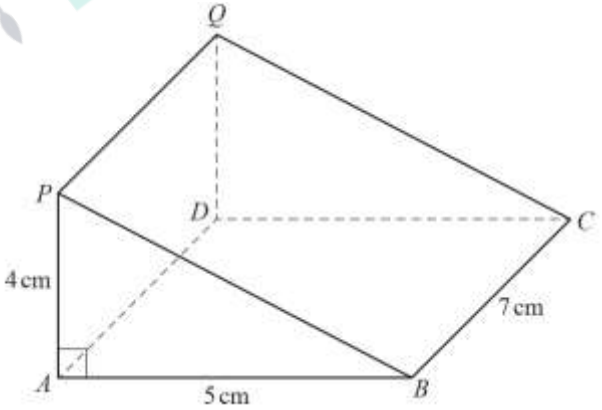
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5. A rod of length 145 cm is placed inside the water tank. One end of the rod is in the bottom corner of the tank as shown.
The other end of the rod is x cm below the top corner of the tank as shown.



(i) Calculate the value of x. [4]
(ii)Calculate the angle that the rod makes with the base of the tank. [3]
0580/42/O/N/14 Q7

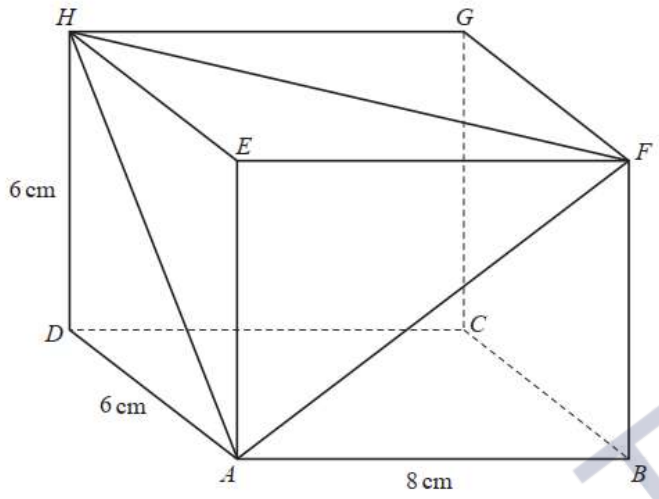
6. The diagram shows a triangular prism ABCDQP of length 7cm.The cross-section is triangle PAB with PA = 4 cm, AB = 5 cm and angle PAB = 90°.Calculate the angle between the line PC and the base ABCD. [4]



0580/22/F/M/23 Q22)

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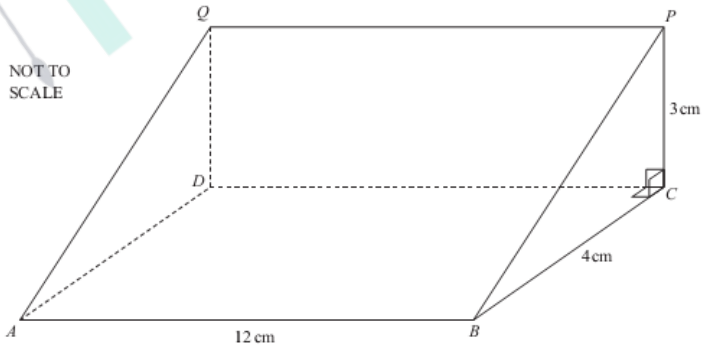
7. The diagram shows a cuboid.
AB = 8cm, AD = 6cm and DH = 6cm.
Calculate angle HAF



.

0580/22/M/J/20 Q27)

8. The diagram shows a triangular prism of length 12cm. The rectangle ABCD is horizontal and the rectangle DCPQ is vertical. The cross-section is triangle PBC in which angle BCP= 90°, BC= 4cm and CP= 3cm.

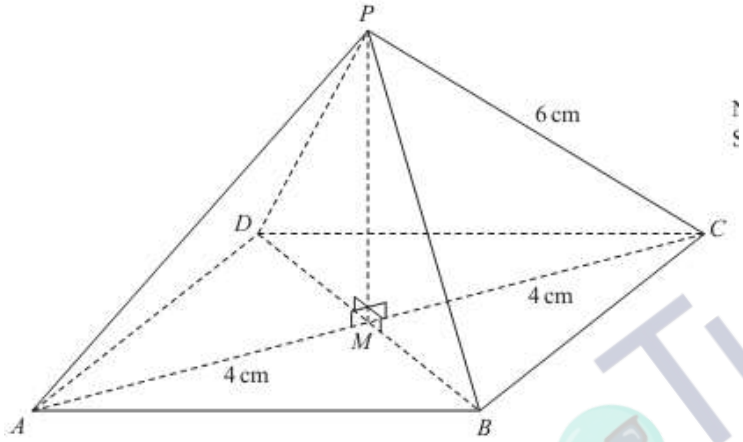


(a) (i)Calculate the length of AP. [3]
(ii) Calculate the angle of elevation of P from A.
[2]
(b) (i)Calculate angle PBC. [2]
(ii) X is on BP so that angle BXC= 120°.
Calculate the length of XC. [3]

0580/43/O/N/11 Q6

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9. 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.



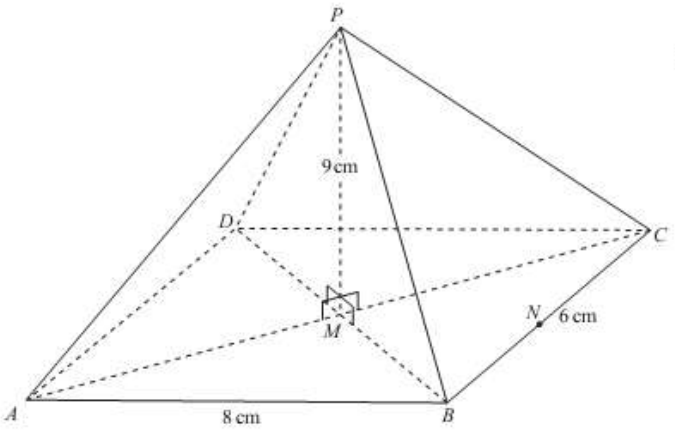
Calculate

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

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

0580/22/M/J/14 Q21)

10. The diagram shows a pyramid on a rectangular base ABCD. AC and BD intersect at M and P is vertically above M. AB =8 cm, BC =6 cm and PM =9 cm.



(a) N is the midpoint of BC.

Calculate angle PNM. [2]

(b) Show that BM =5 cm. [1]

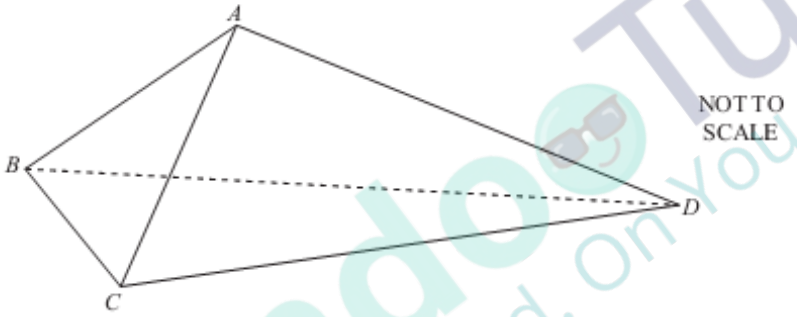
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(c) Calculate the angle between the edge PB and the base ABCD. [2]

(d) A point X is on PC so that PX =7.5 cm. Calculate BX. [6]

0580/42/M/J/17 Q8

11. The diagram shows a tent ABCD.



The front of the tent is an isosceles triangle ABC, with AB = AC. The sides of the tent are congruent triangles ABD and ACD.

(a) BC = 1.2 m and angle ABC = 68°. Find AC.[3]

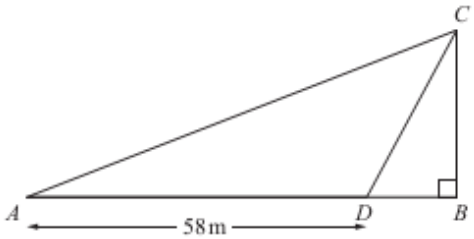
(b) CD = 2.3 m and AD= 1.9 m. Find angle ADC. [4]

(c) The floor of the tent, triangle BCD, is also an isosceles triangle with BD = CD. Calculate the area of the floor of the tent. [4]

(d) When the tent is on horizontal ground, A is a vertical distance 1.25 m above the ground. Calculate the angle between AD and the ground. [3] **0580/42/O/N/15 Q4)**

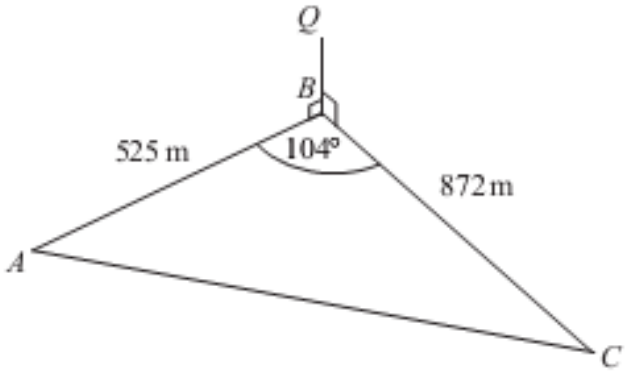
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12. (a) In the diagram, BC is a vertical wall standing on horizontal ground AB.



D is the point on AB where AD= 58 m.
The angle of elevation of C from A is 26°.
The angle of elevation of C from D is 72°.
(i) Show that AC =76.7 m, correct to 1 decimal place. [5]
(ii) Calculate BD [3]
(b) Triangle EFG has an area of 70 m^2.
EF: FG =1 : 2 and angle EFG =40°.
(i) Calculate EF. [4]
(ii) A **different** triangle PQR also has an area of 70 m^2. PQ: QR= 1 : 2 and PQ= EF.
Find angle PQR. [1]
0580/43/M/J/19 Q9)

13. ABC is a triangular field on horizontal ground.
There is a vertical pole BQ at B.
AB = 525 m, BC = 872 m and angle ABC = 104°.



(a) Use the cosine rule to calculate the distance AC. [4]
(b) The angle of elevation of Q from C is 1.0°.
Showing all your working, calculate the angle of elevation of Q from A. [4]

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(c) (i) Calculate the area of the field. [2]

(ii) The field is drawn on a map with the scale 1 : 20 000. Calculate the area of the field on the map in cm^2. [2]

0580/43/M/J/17 Q9)

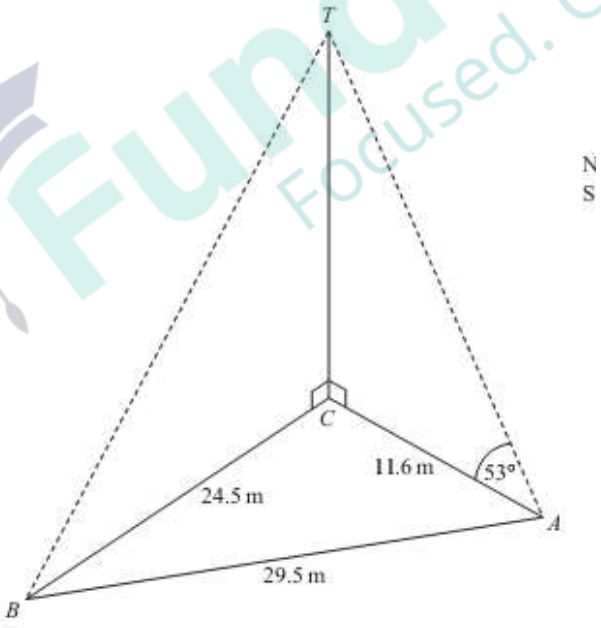
14. The diagram shows a vertical flagpole TC.
A, B and C are on horizontal ground.
AC= 11.6 m, BC= 24.5 m and AB= 29.5 m.
The angle of elevation of T from A is 53°.

(a)Calculate the angle of elevation of T from B. [3]

(b)Calculate angle ACB and show that it rounds to 104°, correct to the nearest degree.[4]

(c)Calculate the area of triangle ABC.[2]

(d) D is on CB so that angle CDA= 60°.
Calculate the length of AD.[3]



0580/47/M/J/14 Q3)

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Answers

1) 14.4	8)) (a) (i) 13 (ii) 13.35 (b) (i) 36.9 (ii)2.77
2) 22.6	9) (a) 4.47 (b) 48.2
3) 35.3	10))(a) 66[.0] (b)$\sqrt{3^2 + 4^2}$ (c) 60.9 (d) 5.83
4) (a) 9.11 (b) 33.3	11) (a) 1.60 (b) 43.5 or 43.6 (c) 1.33 (d)41.1
5) (c)15 (d) 24.4	12) (a)(i) 76.68 (ii) 10.9 (b)(i) 10.4 (ii) 140
6) 24.9 or 24.93 to 24.94	13) (a) 1120 (b)1.66 (c)(i) 222 000 (ii) 5.55
7) 64.9	14) (a) 32.1 (b) 103.8 (c) 138 (d) 13[.0]

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