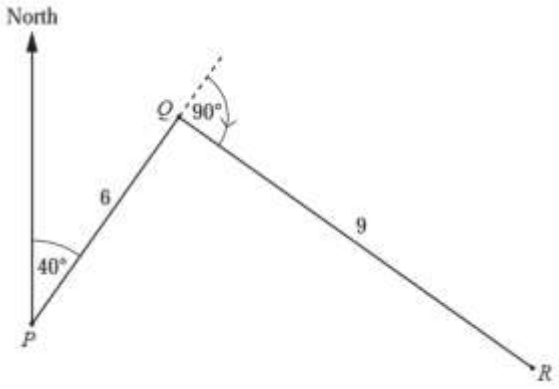
1. The bearing of Q from P is $040°$.



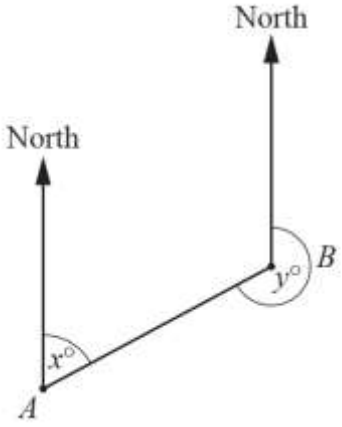
(i) Calculate the bearing of R from Q. [1]
(ii) Calculate the bearing of P from Q. [1]
4024/11/O/N/18 Q16(b)



[Q1 – Q5]

2. The bearing of Alexandria from Paris is 128°.
Calculate the bearing of Paris from Alexandria. [2]
0580/22/F/M/19 Q7)

3. The bearing of B from A is $x°$.
The bearing of A from B is $y°$.
$x : y = 2 : 7$
Calculate the value of y. [3]

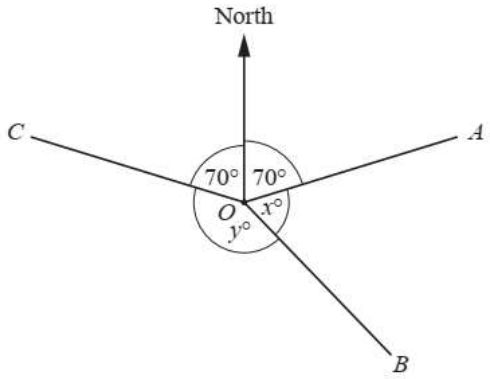


0580/23/M/J/22 Q18)

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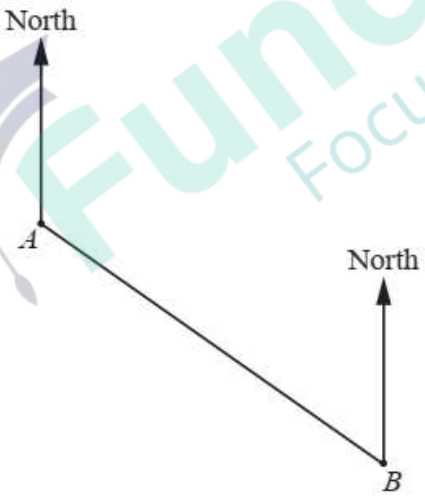


4. In the diagram, OC and OA each make an angle of $70°$ with the North line. $A\hat{O}B = x°$ and $B\hat{O}C = y°$.



(a) $x : y = 3 : 7$.
Find the value of x. [2]
(b) Find the bearing of C from O. [1]
(c) Find the bearing of O from A. [1]
4024/11/O/N/20 Q13)

5. The diagram shows the position of two ships, A and B.



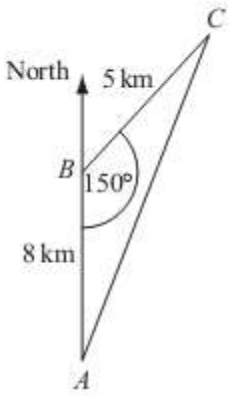
Scale: 1 cm to 30 m

On the diagram 1 cm represents 30 m.
(a) Find, by measurement, the actual distance of B from A. m[2]
(b) Measure the bearing of B from A. [1]
(c) A third ship is positioned at C.
C is on a bearing of $164°$ from A and on a bearing of $252°$ from B.
Find and label the position of C on the diagram. [2]
4024/11/O/N/22 Q4)

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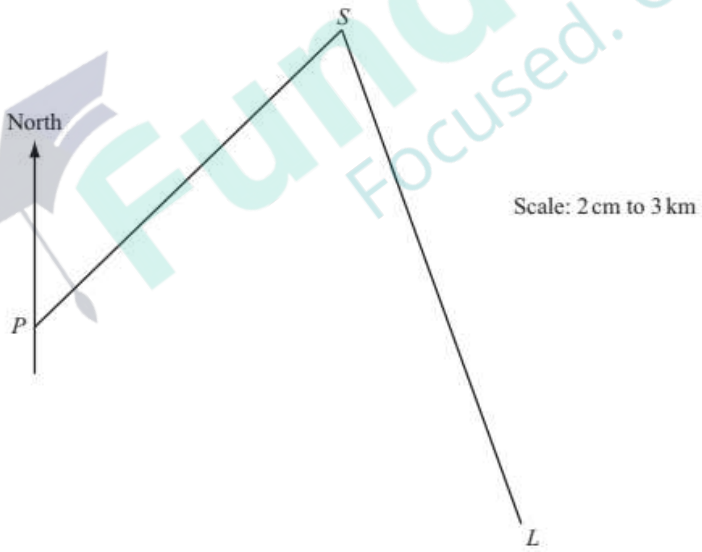
[Q6 – Q15]

6. A helicopter flies 8km due north from A to B.
It then flies 5km
from B to C and returns to A. Angle ABC= 150°.
(a) Calculate the area of triangle ABC. [2]
(b) Find the bearing of B from C. [2]



0580/22/M/J/12 Q12)

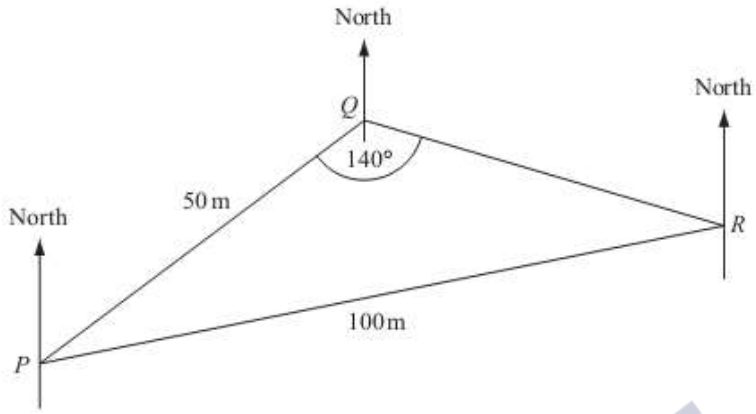
7. In the scale drawing, P is a port, L is a lighthouse and S is a ship.



The scale is 2 centimetres represents 3 kilometres.
(a) Measure the bearing of S from P. [1]
(b) Find the actual distance of S from L. [2]
(c) The bearing of L from S is 160°.
Calculate the bearing of S from L. [1]
(d) Work out the scale of the map in the form 1:n. [2]
(f) The lighthouse stands on an island of area 1.5cm^2 on the scale drawing.
Work out the actual area of the island (in km^2).
0580/41/M/J/14 Q5)

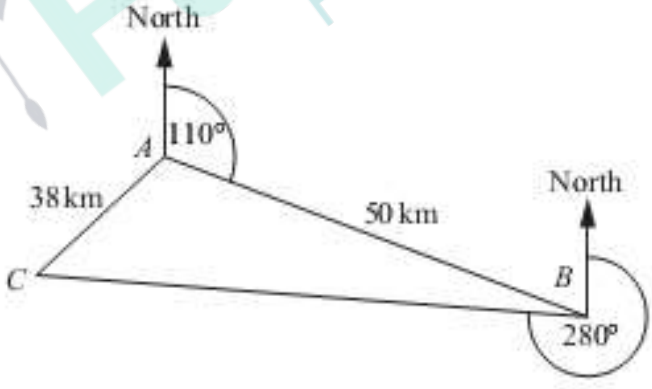
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8. The diagram shows three points P, Q and R on horizontal ground.
PQ= 50 m, PR= 100 m and angle PQR= 140°.



(a) Calculate angle PRQ. [3]
(b) The bearing of R from Q is 100°.
Find the bearing of P from R. [2]
0580/23/M/J/10 Q21)

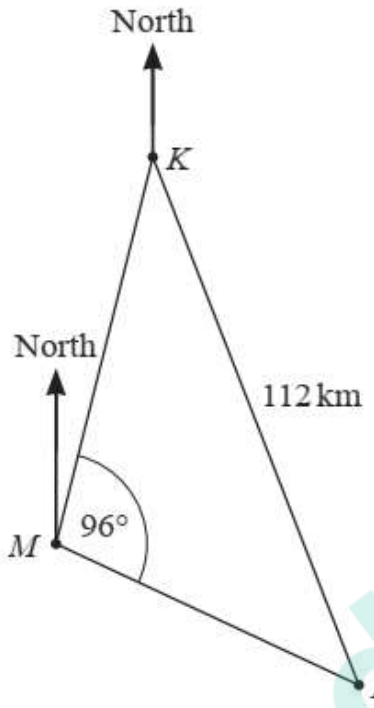
9. A, B and C are three towns.



The bearing of B from A is 110°.
The bearing of C from B is 280°.
km AC = 38 Km and AB = 50 Km .
(i) Find the bearing of A from B. [2]
(ii) Calculate angle BAC. [5]
(iii) A road is built from A to join the straight road BC.
Calculate the shortest possible length of this new road. [3]
0580/41/M/J/17 Q8(a)

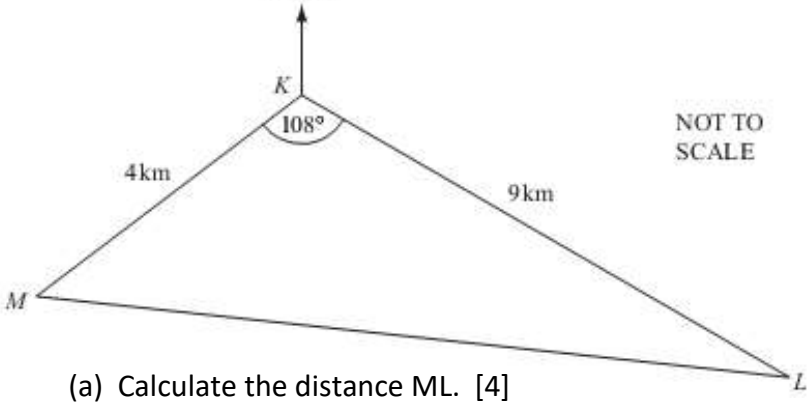
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10. The diagram shows the positions of a lighthouse, L, and two ships, K and M.



The bearing of L from K is $155°$ and $KL = 112$ km.
The bearing of K from M is $010°$ and angle $KML = 96°$.
Find the bearing and distance of ship M from the lighthouse, L. [5]
0580/42/O/N/22 Q7(c)

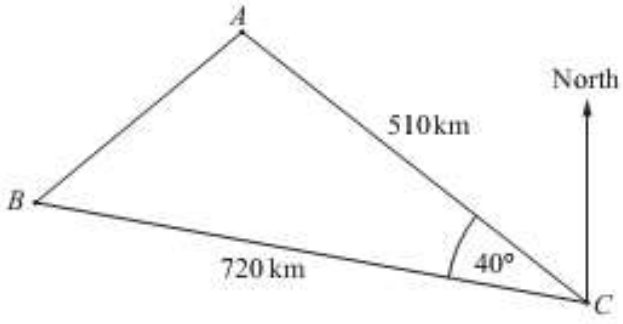
11. Three buoys K, L and M show the course of a boat race.
MK= 4km, KL= 9km and angle MKL= 108°.



(a) Calculate the distance ML. [4]
(b) The bearing of L from K is 125°.
(i) Calculate how far L is south of K. [3]
(ii) Find the three figure bearing of K from M. [2]
0580/41/M/J/12 Q2)

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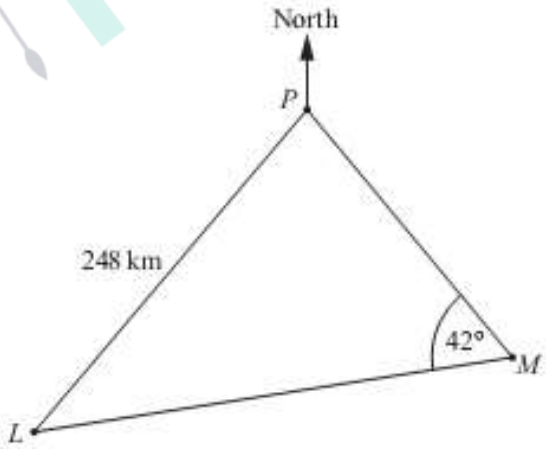
12. A plane flies from A to C and then from C to B.
AC= 510 km and CB= 720 km.
The bearing of C from A is 135° and angle ACB= 40°.



(a) Find the bearing of
(i) B from C, [2]
(ii) C from B. [2]
(b) Calculate AB and show that it rounds to 464.7 km, correct to 1 decimal place. [4]
(c) Calculate angle ABC. [3]

0580/43/M/J/16 Q5)

13. The diagram shows two ports, L and P, and a buoy, M.
The bearing of L from P is 201° and LP =248 km.
The bearing of M from P is 127°. Angle PML = 42°.

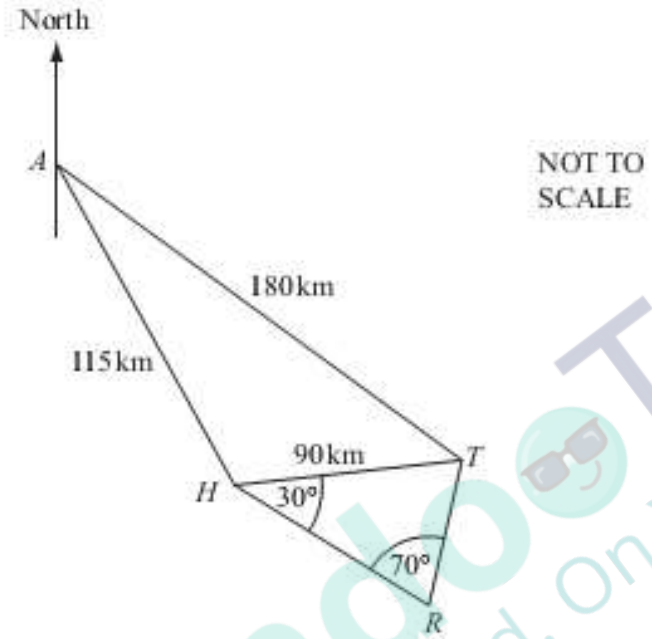


(a) Use the sine rule to calculate LM. [4]
(b) A ship sails directly from L to P.
(i) Calculate the shortest distance from M to LP. [3]
(ii) The ship leaves L at 20 45 and travels at a speed of 40 km/h.
Calculate the time the next day that the ship arrives at P. [3]

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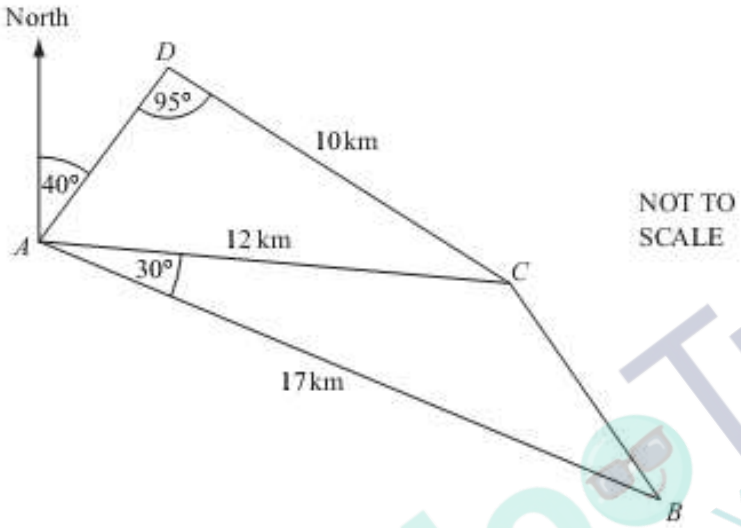
14. The diagram shows some straight line distances between Auckland (A), Hamilton (H), Tauranga (T) and Rotorua (R).
AT= 180 km, AH= 115 km and HT= 90 km.



(a) Calculate angle HAT.
Show that this rounds to 25.0°, correct to 3 significant figures. [4]
(b) The bearing of H from A is 150°.
Find the bearing of
(i) T from A, [1]
(ii) A from T. [1]
(c) Calculate how far T is east of A. [3]
(d) Angle THR= 30° and angle HRT= 70°.
Calculate the distance TR. [3]
(e) On a map the distance representing HT is 4.5cm.
The scale of the map is 1 : n.
Calculate the value of n. [2]
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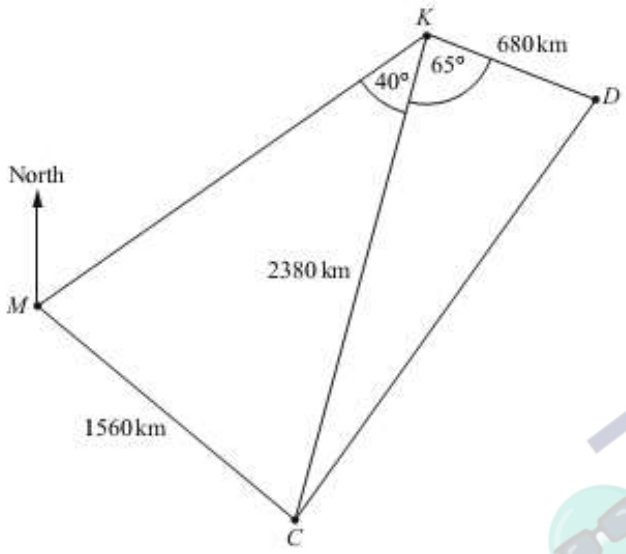
15. The diagram shows straight roads connecting the towns A, B, C and D.
AB= 17km, AC= 12km and CD= 10km.
Angle BAC= 30° and angle ADC= 95°.



(a)Calculate angle CAD. [3]
(b) Calculate the distance BC. [4]
(c) The bearing of D from A is 040°.
Find the bearing of
(i) B from A, [1]
(ii) A from B. [1]
(d) Angle ACB is obtuse.
Calculate angle BCD. [4]
0580/43/M/J/12 Q2)

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16. The diagram shows some distances between Mumbai (M), Kathmandu (K), Dhaka (D) and Colombo (C).



(a) Angle CKD= 65°.

Use the cosine rule to calculate the distance CD. [4]

(b) Angle MKC= 40°.

Use the sine rule to calculate the acute angle KMC. [3]

(c) The bearing of K from M is 050°.

Find the bearing of M from C. [2]

(d) A plane from Colombo to Mumbai leaves at 21 15 and the journey takes 2 hours 24 minutes.

(i) Find the time the plane arrives at Mumbai. [1]

(ii) Calculate the average speed of the plane (in km/h). [2]

0580/43/O/N/15 Q5)

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Answers

1) (i) 130° (ii)220°	9) (i) 290 (ii) 156.8 (iii) 8.68
2) 308°	10) 286 and 64.6 km
3) 252	11) (a) 10.9 (b) (i) 5.16 (ii) (0)53
4) (a) 66 (b)290 (c)250	12) (a) (i) 275 (ii) 095 (b) 464.67 (c) 44.9
5) (a) 162 to 174 (b) 123 to 127	13) (a) 356 (b)(i) 320 (ii) 02 57
6) (a) 10 (b)210	14) (a) 24.99 (b) (i) 125 (ii) 305 (c) 147(.4) (d) 47.9 (e) 2 000 000
7) (a) [0]44 to [0]48 (b) 12.6 to 13.2 (c) 340 (d) 1 : 150000 (f) 3.375	15) (a) 56.1 (b) 8.93 (c)(i) 126.1 (c)(ii)306.1 (d) 136.6
8) (a)18.7 (b)261.3	16) (a) 2180 or 2181 (b) 78.7 (c) 309 (d) (i) 2339 (ii) 650

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