

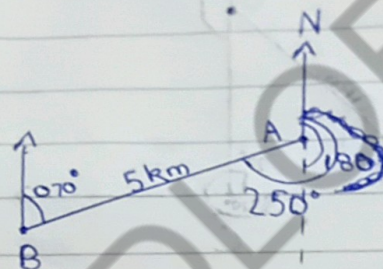
Unit 6

Ex 6.6

- Q13 distance boat A to boat B = 5km.
distance of boat B from A = 250°
Bearing of boat A from B = ?

$$1 \text{ km} = 1 \text{ cm}$$

$$5 \text{ km} = 5 \text{ cm}$$

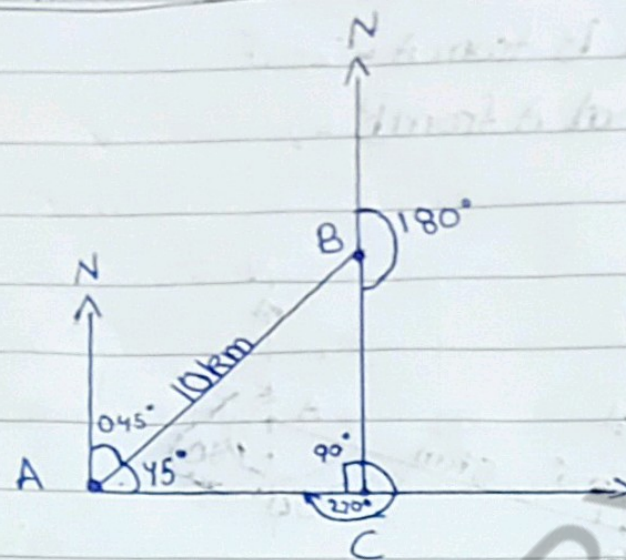


$$\begin{array}{r} 250^\circ \\ - 180 \\ \hline 70^\circ \end{array}$$

Bearing of boat A from B = 070°

- Q4 Bearing of B from A = 045°
Ship C is to the east of A
Bearing of C from B is = 180°
 $m = AB = 10 \text{ km}$
Bearing of A from C = ?
 $m AC = ?$

$$\begin{aligned} \vec{CA} &= (01)(101, 0) \\ \vec{CA} &= (01, 5) \\ \cos(0.5) &= \frac{\vec{CA}}{AC} \end{aligned}$$



Scale:

$$2 \text{ km} = 1 \text{ cm}$$

$$10 \text{ km} = 5 \text{ cm}$$

Bearing of A from C = $90^\circ + 180^\circ = 270^\circ$

In $\triangle CAB$

$$\theta = 45^\circ$$

$$h = 10$$

$$\cos \theta = \frac{b}{h}$$

$$\cos 45^\circ = \frac{AC}{10}$$

$$(0.707)(10) = AC$$

$$7.07 = AC$$

$$\boxed{AC = 7.07 \text{ km}}$$

Q5 bearing of θ from $P = 050^\circ$

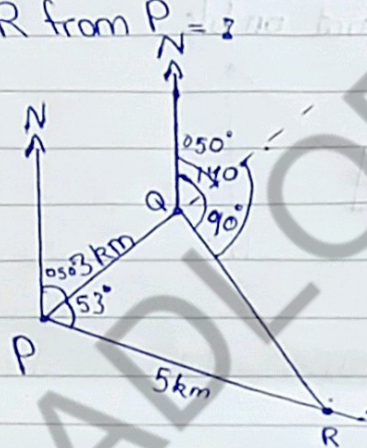
$$mPQ = 3\text{ km}$$

bearing R from $Q = 140^\circ$

$$mQR = 2$$

$$mPR = 5\text{ km}$$

bearing of R from $P = ?$



Scale:

$$1\text{ km} = 1\text{ cm}$$

$$3\text{ km} = 3\text{ cm}$$

$$5\text{ km} = 5\text{ cm}$$

$$\begin{aligned} 140^\circ - 50^\circ \\ = 90^\circ \end{aligned}$$

The bearing of R from P :-

In ΔPQR

$$\cos \theta = \frac{B}{H}$$

$$\cos \theta = \frac{3}{5}$$

$$\theta = \cos^{-1}(0.6)$$

$$\theta = 53^\circ$$

$$50^\circ + 53^\circ = 103^\circ$$

Is Bearing of R
from P

$$H^2 = B^2 + P^2$$

$$(5)^2 = (3)^2 + (QR)^2$$

$$25 = 9 + (QR)^2$$

$$25 - 9 = (QR)^2$$

$$16 = (QR)^2$$

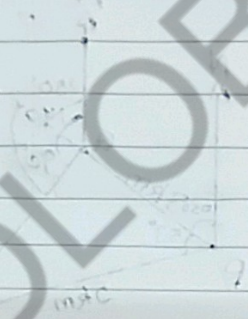
Taking square root on b/s

$$\sqrt{16} = \sqrt{(QR)^2}$$

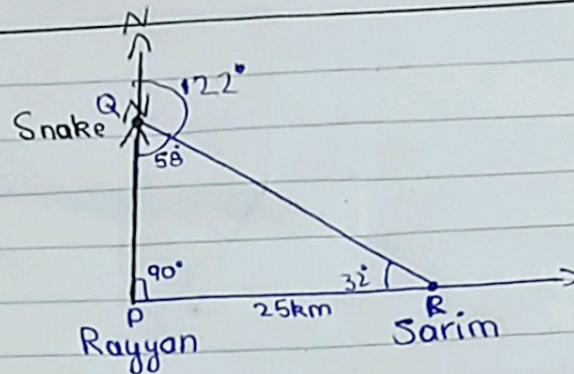
$$4 = QR$$

$$QR = 4 \text{ km}$$

~~QR~~



Q6



Scales:-

$$5\text{km} = 1\text{cm}$$

$$25\text{km} = 5\text{cm}$$

$$PR = 25\text{km}$$

The bearing of Sarim from Snake = 122°

To find

$$PQ = ?$$

Sol:-

$$\tan \theta = \frac{P}{B}$$

$$\tan(32^\circ) = \frac{PQ}{25}$$

$$(0.6248)(25) = PQ$$

$$15.6\text{m} = PQ$$

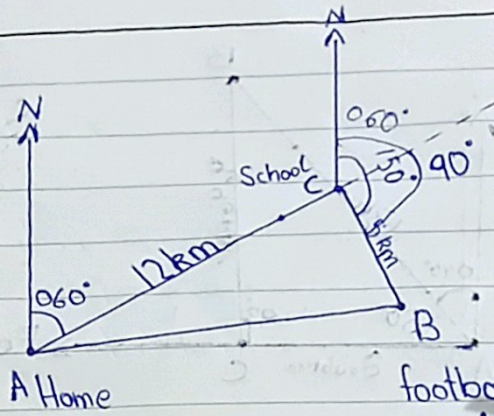
$$PQ = 15.6\text{m}$$

$$180^\circ - 122^\circ = 58^\circ$$

$$180^\circ - 90^\circ = 90^\circ$$

$$180^\circ - 90^\circ - 58^\circ = 32^\circ$$

Q7



Scale:-

~~12~~ 12 km = 1 cm

12 km = 6 cm.

5 km = 2.5 cm

Given:-

AC = 12 km.

Bearing of School from home is 060°

Bearing from football ground from school is 150°

BC = 5 km.

To find:-

AB = ?

Solution

In $\triangle ABC$

$H^2 = B^2 + P^2$

$H^2 = (12)^2 + (5)^2$

$H^2 = 144 + 25$

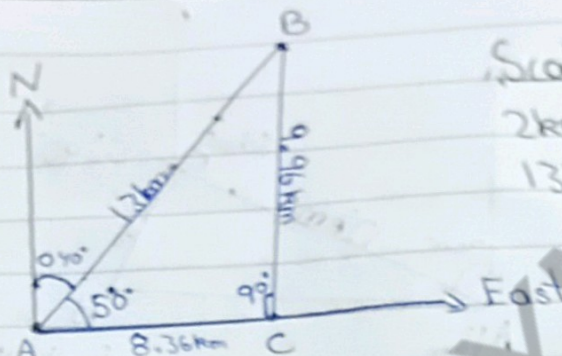
$H^2 = 169$

$(AB)^2 = 169$

$\sqrt{(AB)^2} = \sqrt{169}$

AB = 13 Km

Q8



Scales:

$$2 \text{ km} = 1 \text{ cm}$$

$$13 \text{ km} = 6.5 \text{ cm}$$

Given:-

The bearing of car from North is 040°

Car distance = 13 km

To find:-

Northward component = $BC = ?$

Eastward = $AC = ?$

Now find AC

Sol:-

$$\cos \theta = \frac{H}{H}$$

$$\sin \theta = \frac{P}{H}$$

$$\sin(50^\circ) = \frac{P}{13}$$

$$(0.7660)(13) = P$$

$$9.958 = P \text{ or}$$

$$BC = 9.96 \text{ km}$$

$$\cos \theta = \frac{B}{H}$$

$$\cos(50^\circ) = \frac{AC}{13}$$

$$0.6427$$

$$(0.7660)(13) = AC$$

$$9.958 = AC$$

$$AC = 9.96 \text{ km}$$

$$8.36 \text{ km} = AC$$

$$AC = 8.36 \text{ km}$$