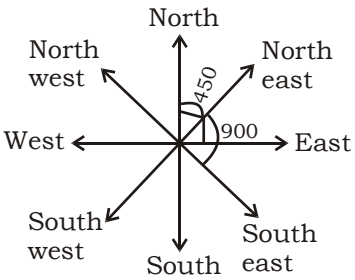
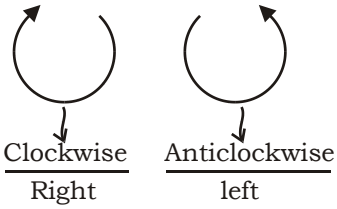
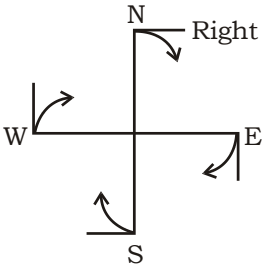
DIRECTION AND DISTANCE



N W S E – Anti clockwise
N E S W – Clock wise

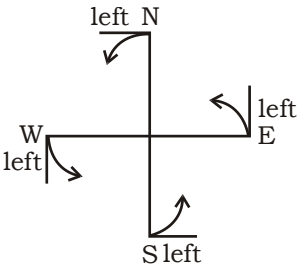
N W S E – okekor Z(nk¡ l sck)
N E S W – nf{k kkor Z(ck¡ l snk)





clockwise moving

Fig (i)



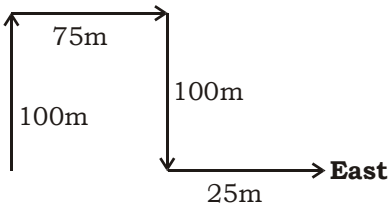
Anti-clockwise moving

Fig (ii)

TYPE - I

1. A man walking towards north after walking 100 m turns right and walk 75 m again he turns right and walk 100 m and last movement he turns left and walk 25 m now which direction he is walking?

Sol.



Ans : East

Trick:-

North
Right
Right ×
left ×
East

2. East
Left ×
Right ×
Right ×
Left ×
Left

East Left North

3. South
L ×
R
R
R
2R
?

South opposite North

v x j 2R ; k 2L (Opposite direction)

4. South
L
L
2L
R
L
?

South-west opposite North east

5. West
R
R
R
R
? West

4 Right ; k 4 left gks = same direction

6. North

400 times R
300 times L
300 R cp k 100R : 300 L
$\frac{100}{25}$ 4R

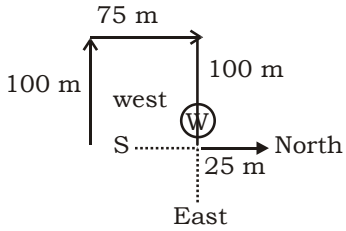
? (North) 4R Same North

4 Multiple

TYPE -II

7. A man walks in straight 100 m and turns his right and walk 75 m. Again he turns his right and walk 100 m. And last he turns his left and walk 25 m. If now he is walking in north direction. Then find from which direction he started?

Sol.



west

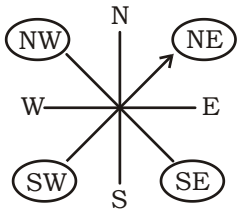
Trick

? West
R
R
L
North

8. ? South
L Change R
R
L
R
L
East

9. ? East
(L) Change (R)
~~R~~
~~L~~
~~R~~
~~L~~
North

10. ? North east
~~R~~
~~L~~
(R R) 2 R change direction 2 L
South west



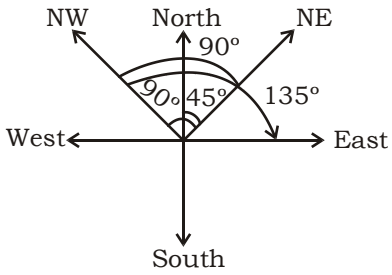
Right- clockwise
left-Anti-clockwise

? (North-east)
~~L~~
~~R~~
~~R~~
~~L~~
(L) change (R)
North-west

TYPE -III

11. A man faces towards north first he turns is 45° clockwise then he turns 90° Anticlockwise. At last he turns 135° clockwise. Now his face on which side?

Sol.



now his face on East

Trick

North
45° Clock-wise
+ 90° Anti-clock-wise
135° Clock-wise

45°+135° =180° Clock-wise
90° Anti-clock-wise
90° Clock-wise

[Those digit higher, C.W and A.C.W depends on that]
East

12. East
45° c.w]
90° c.w] +
180° A.c.w
135° c.w]+
270° c.w
180° A.c.w
90° c.w ⟶ South

[Those digit higher, C.W and A.C.W depends on that]
East

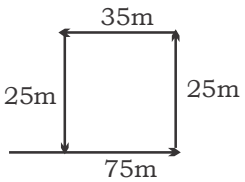
13. East
45° c.w]
90° A.c.w
45° A.c.w
90° c.w]
45° c.w]
180° A.c.w
135° A.c.w
45° c.w ⟶ North-east

14. A man is walking towards east. He walks 75m and turn left and again walks 25 m. Again he turn left he walks 35 m. At last he walk 25 m and turn left.

Types

1. Now, he is going in which direction
2. Now he is on which direction from the initial point?
3. Now he is how far distance from the initial point?
4. Now he is how far and in which direction from the initial point?

Sol.



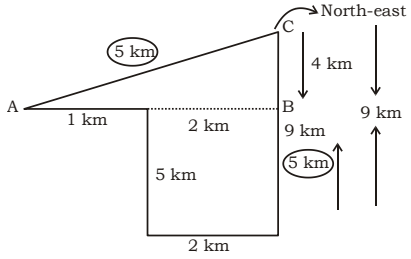
1st East
L
L
L
South
2L oppsite Driection ⟶ west
west d k left south
gkak

2nd Ans. east
3rd Ans. 40 m
4th Ans. 40 m, east

TYPE -IV

15. A man walk in 1 km East. Now he turns south and walk 5 km again he turns East and walk 2 km. At last he turns north and walk 9 km. Now find that he in which direction and how far from the initial point?

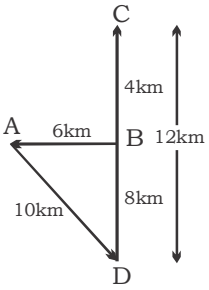
Sol.



In D ABC : AB = 3km
BC : 4 km
AC : $\sqrt{(3)^2+(4)^2}$
$\sqrt{9+16}$: $\sqrt{25}$: 5 km
5 km, North. east

16. A is 6 km West from B. And C is 4 km north to B. D is 12 km south from C. now D on which direction and how far from A.

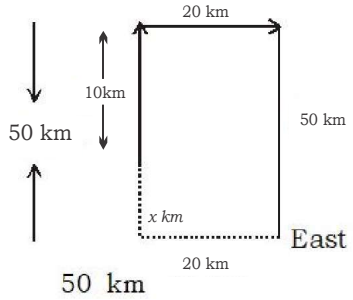
Sol.



BD = 8 km
BA : 6 km
AD : $\sqrt{(8)^2+(6)^2}$
$\sqrt{64+36}$
$\sqrt{100}$ = 10 km
10 km, South-West

17. A man walks 10km in north and turns his right. And walk 20 km. Again he turn right and walk 50 km if he is 20 km west from he initial point. Now find that he how much walk initially?

Sol.

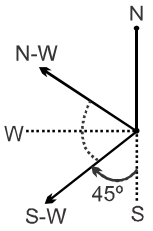


$10 + x = 50$

$x = 50 - 10 = 40$ km

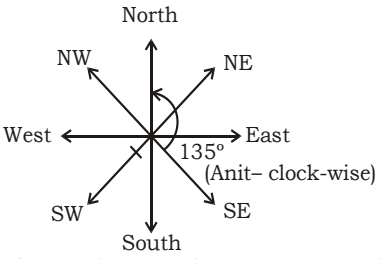
18. A man walks in south direction. After he walks 1 km he turn his right 45° and walk 2 km again he turn his right and walk same distance. Now find that in which direction is he going?

Sol.



A man is going in to south direction from there he turns 45° right means in sout west direction and from there right (90°) direction will be north west direction.

TYPE – V



19. If South-east becomes North, North-east becomes west and So on that what will west becomes?

Sol.

S.E $\xrightarrow{135^\circ \text{ AC.W}}$ North

N.E $\longrightarrow$ West

West $\longrightarrow$ (South-east)

20. If North becomes North-east, South becomes?

Sol.

N $\xrightarrow{45^\circ \text{ C.W}}$ North-east

South $\xrightarrow{45^\circ \text{ C.W}}$ (South-west)

21. If South-east becomes South-west, then South becomes ?

Sol.

S.E $\xrightarrow{90^\circ \text{ C.W}}$ South-west

S $\xrightarrow{90^\circ \text{ C.W}}$? (West)

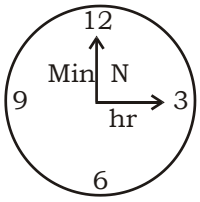
22. It is 3 O' clock if at into time the minute hand points towards North-east than in which hours would be?

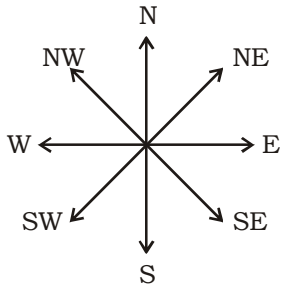
Sol. 3:00

~~Min~~ (North) $\xrightarrow{\text{clock-wise}}$ NE

~~Hr~~ (East) $\longrightarrow$ South east

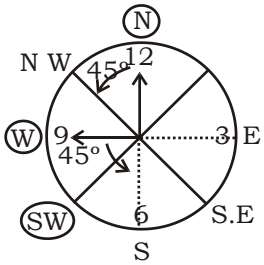
Actual direction





23. It is 9 O' clock, if at this time the hours hand points towards South-west than in which direction Minute would be?

Sol. 9:00



Hr $\longrightarrow$ (West) $\xrightarrow{45^\circ \text{ ACW}}$ S.W

Min $\longrightarrow$ (North) $\longrightarrow$? North-west

Actual direction

24. It is 4:30 O' clock if at this time hours hand points towards South-west than in which direction minute would be?

Sol. 4:30

Hr $\longrightarrow$ (South-east) $\xrightarrow{90^\circ \text{ CW}}$ S.W

Min $\longrightarrow$ (South) $\longrightarrow$ west

Actual direction

Ex.1

9:00

9:00 Min $\longrightarrow$ North $\xrightarrow{45^\circ \text{ C.W}}$ N.E

3:00 Hr $\longrightarrow$ East $\xrightarrow{45^\circ \text{ C.W}}$ S.E

Ex2.

7:30 Hr $\longrightarrow$ (S.W) $\xrightarrow{45^\circ \text{ C.W}}$ West

1:30 Hr $\longrightarrow$ (N.W) $\longrightarrow$ East

Actual direction

Ex3.

10:00 Min $\longrightarrow$ (North) $\longrightarrow$ N.E

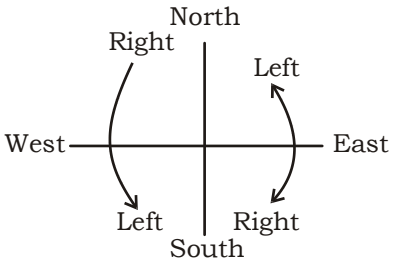
4:00 Min $\longrightarrow$ (North) $\longrightarrow$ N.E

Actual direction

TYPE -VI

25. In the morning A man was performing Yoga with (i) Head down and legs up, if at this time his face towards west than which direction his left hand would be?

Sol.



Face ® west $\xrightarrow{\text{Reverse}}$ East

Left hand $\longrightarrow$ (North)

Ex2. Face ® South $\xrightarrow{\text{Reverse}}$

North $\longrightarrow$ Right hand $\longrightarrow$? (East)

Face

Ex3. Face ® East $\xrightarrow{\text{Reverse}}$ West

Face

Right hand $\longrightarrow$? (North)

TYPE – VII

Shadow (opposite to sun)E/W

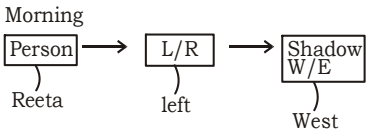
Morning → Sun Rise → East (Actual) opposite (West) Morning Shadow

Evening → Sun set → West (Actual) opposite (East) Evening Shadow

1. Right hand ® west face ® South
2. Left hand ® west face ® North
3. Right hand ® East face ® North
4. Left hand ® East face ® South

26. A morning two friend Reeta and Kavita talks to each other. If at the time Kavita shadow from the left side of Reeta, now find that Kavita face on which direction?

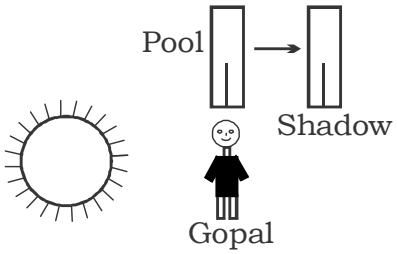
Sol.



Kavita ⟶ face ⟶ South

27. An evening Gopal saw a pool . If at the time a pool shadow made his right, now find that Gopal face which direction?

Sol. Evening-Sun-West
Shadow-East



Gopal face in north