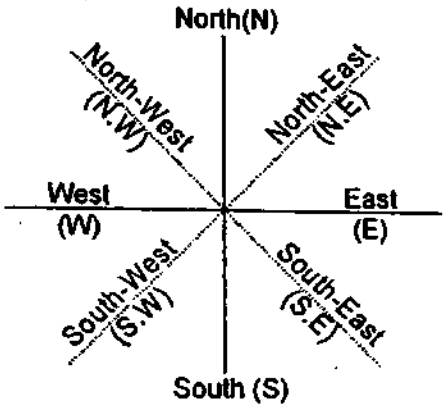
6 DIRECTION TEST

In this chapter we will deal with the problems related to directions. In the questions a problem based on directions is given and on the basis of the information given in the problem we have to decipher the resultant direction or the distance travelled following certain rules.

The following diagram illustrates the basic directions.



Note that one should be aware of basic geometric rule, such as Pythagorus Theorem before proceeding further.

Pythagorus Theorem $\Rightarrow AC^2 = AB^2 + BC^2$

$\therefore AC = \sqrt{AB^2 + BC^2}$

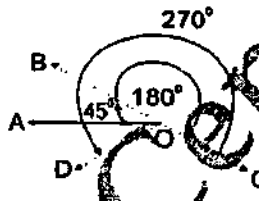
Now, let's see some examples for better understanding

1. A man is facing West. He turns 45° in the clockwise direction and then another 180° in the same direction and then 270° in the anti-clockwise direction. In which direction is he facing now?

(1) South (2) North-West (3) West

(4) South-West (5) None of these

Sol. (4): Clearly, the man initially faces the direction OA. On moving 45° clockwise, he faces the direction OB. On further moving 180° clockwise, he faces the direction OC. Finally, on moving 270° anti-clockwise, he faces the direction OD, which is South-West.



(45° CW + 180° CW + 270° ACW = 45° ACW from the original position)

Note: CW- Clockwise, ACW- Anti-clockwise

2. A man is looking for his friend. He went 90 m in the East before turning to his right. He went 20 m before turning to his right again and goes further to look for his friend at his uncle's place 30 m from this point. His friend was not there. From there, he went 100 m to North before meeting his friend in a street. How far did the man meet his friend from the starting point?

(1) 80 m (2) 100 m (3) 140 m

(4) 260 m (5) None of these

Sol. (2): Clearly, the man moves from A, 90 m Eastwards upto B, then turns right and moves 20 m upto C, then turns right and moves 30 m upto D. Finally, he turns right and moves 100 m upto E.

Clearly,

AB = 90 m, BF = CD = 30 m

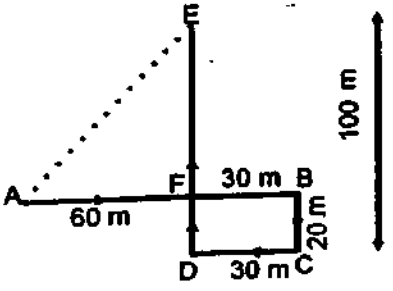
So, AF = AB - BF = 60 m.

Also, DE = 100 m, DF = BC = 20 m.

So, EF = DE - DF = 80 m.

$\therefore$ His distance from starting point

$AE = \sqrt{AF^2 + EF^2}$



Paramount Coaching Centre

$= \sqrt{(60)^2 + (80)^2} = \sqrt{3600 + 6400} = \sqrt{10000} = 100$ m

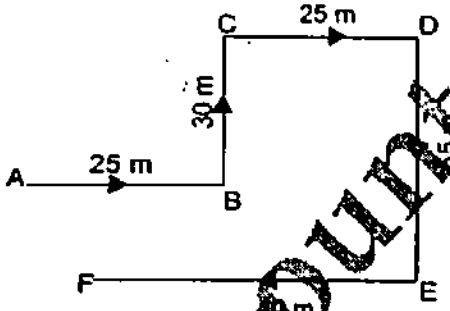
3. Chandan faces towards North. Turning to his right, he walks 25 m. He then turns to his left and walks 30 m. Next, he moves 25 m after turning to his right. He then turns to his right again and walks 55 m. Finally, he turns to the right and moves 40 m. In which direction is he now from his starting point?

(1) South-West (2) South

(3) North-West (4) South-East

(5) None of these

Sol. (4): Chandan turns towards right from North direction. So, he walks 25 m towards East upto B, turns left and moves 30 m upto C, turns right and goes 25 m upto D. At D, he turns to right towards the South and walks 55 m upto E. He again turns to right and walks 40 m upto F, which is his final position. F is to the South-East of A. So, he is to the South-East from his starting point.

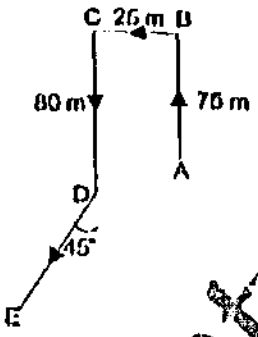


4. Deepika moved a distance of 75 m towards the North. She then turned to the left and walking for about 25 m, turned left again and walked 80 m. Finally, she turned to the right at an angle of 45°. In which direction was she facing now ?

(1) North-East (2) North-West (3) South

(4) South-West (5) None of these

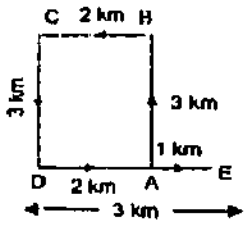
Sol. (4): Deepika started from A, moved 75 m upto B, turned left and walked 25 m upto C. She then turned left again and moved 80 m upto D. Turning to the right at an angle of 45°, she was finally moving in the direction DE i.e., South-West.



5. Satish walks a distance of 2 km towards North, then turns to his left and walks for 2 km. He again turns left and walks for 3 km. At this point he turns to his left again and walks for 3 km. How many kilometres is he from the starting point?

(1) 1 km (2) 2 km (3) 3 km (4) 5 km

Sol. (1): The movements of Satish are as shown in Fig. (A to B, B to C, C to D and D to E). Clearly, AD = BC = 2 km.



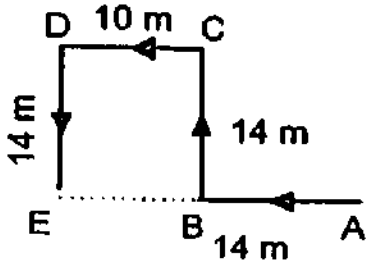
So, required distance = AE = (DE - AD)
= (3 - 2) km. = 1 km

6. Namita walks 14 m towards West, then turns to her right and walks 14 m and then turns to her left and walks 10 m. Again turning to her left she walks 14 m. What is the shortest distance (in metres) between her starting point and the present position?

(1) 10 m (2) 24 m (3) 28 m (4) 38 m

Sol. (2): The movements of Namita are as shown in (A to B, B to C, C to D and D to E).

Clearly, Namita's distance from his initial position = AE = (AB + BE) = (AB + CD)
= (14 + 10) m = 24 m.



Pramount Coaching Centre

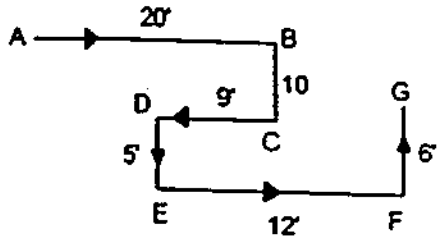
7. A rat runs 20' towards East and turns to right, runs 10' and turns to right, runs 9' and again turns to left, runs 5' and then turns to left, runs 12' and finally turns to left and runs 6'. Now, in which direction is the rat facing?

(1) East (2) West (3) North

(4) South (5) None of these

Sol. (3): The movements of the rat from A to G are as shown in

Clearly, it is finally facing the direction FG i.e. North.



8. Maya starts from point T, walks straight to point U which is 4 ft away. She turns left at 90° and walks to W which is 4 ft away, turns 90° right and goes 3 ft to P, turns 90° right and walks 1 ft to Q, turns left at 90° and goes to V, which is 1ft away and once again turns 90° right and goes to R, 3 ft away. What is the distance between T and R?

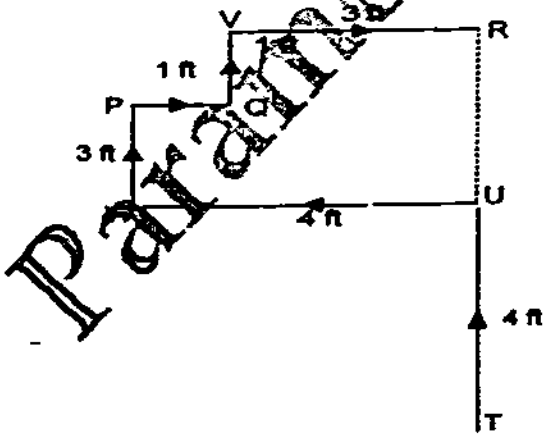
(1) 4 ft (2) 5 ft (3) 7 ft (4) 8 ft

Sol. (4): The movements of Maya from T to R are as shown in

∴ Distance between T and R

= TR = TU + UR = TU + PV + QV

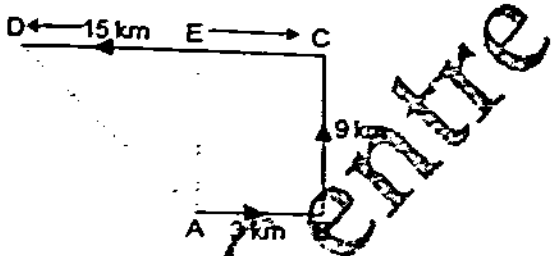
= (4 + 3 + 1) ft = 8 ft.



9. A person starts from a point A and travels 3 km Eastwards to B and then turns left and travels thrice that distance to reach C. He again turns left and travels five times the distance he covered between A and B and reaches his destination D. The shortest distance between the starting point and the destination is

(1) 12 km (2) 15 km (3) 16 km (4) 18 km

Sol. (2): The movements of the person are as shown in



Clearly, AB = 3 km,

BC = 3 AB = (3 × 3) km = 9 km,

CD = 5 AB = (5 × 3) km = 15 km.

Draw AE ⊥ CD.

Then, CE = AB = 3 km and AE = BC = 9 km.

DE = (CD - CE) = (15 - 3) km = 12 km.

In △AED, $AD^2 = AE^2 + DE^2$

$AD^2 = 9^2 + 12^2$

$AD^2 = 81 + 144$

$AD^2 = 225$

$AD = \sqrt{225} = 15$

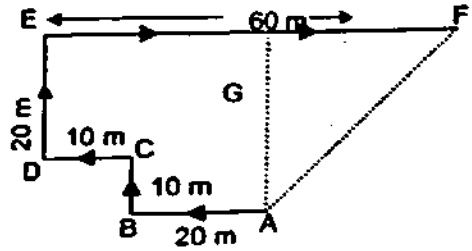
Minimum distance = 15 km.

10. I am facing South. I turn right and walk 20 m. Then I turn right again and walk 10 m. Then I turn left and walk 10 m and then turning right walk 20 m. Then I turn right again and walk 60 m. In which direction am I from the starting point?

(1) North (2) North-West

(3) East (4) North-East

Sol. (4): The movements of the person are from A to F, as shown. Clearly, the final position in F which is to the North-East of the starting point A.



Paramount Coaching Centre

Exercise:

1. Roy walks 2 km to East, then turns North-West and walks 3 km. Then he turns South and walks 5 km. Then again he turns West and walks 2 km. Finally he turns North and walks 6 km. In which direction is he from the starting point?
   (1) South-West (2) South-East
   (3) North-West (4) North-East
   (5) None of these

2. Rana travels 10 km North, turns left and travels 4 km and then again turns right and covers another 5 km. He then turns right and travels another 4 km. How far is he from the point of starting of his journey?
   (1) 5 km (2) 4 km (3) 15 km
   (4) 10 km (5) None of these

3. Ram starts from a point A and walks 6 km North, then turns left and walks 8 km. Then he turns left and walks 12 km up to the point D. In which direction is Ram facing?
   (1) North (2) South (3) East
   (4) West (5) None of these

4. Sita walks 1 km to East, turns right and walks another 1 km and then turns left and walks 2 km and again turning to her left travels 5 km. How far is Sita from her starting point? (Consider the shortest distance)
   (1) 8 km (2) 5 km (3) 7 km
   (4) 6 km (5) None of these

5. Vishal walks 2 km towards South. He then turns right and walks 3 km. He now turns left and walks 5 km. Further, he moves 2 km after turning to the left. In which direction is he facing?
   (1) West (2) East (3) North
   (4) South (5) None of these

6. Kannan walked 10 km towards North. From there he turned back and walked 6 km towards South. Then he walked 3 km towards East. How far was he from the starting point?
   (1) 3 km (2) 6 km (3) 7 km
   (4) 5 km (5) None of these

7. Shashi and Sunil start from 0 (Zero) and walked in opposite directions. Shashi covered 7 km towards West to A and Sunil walked to East 5 km to B. Then Sunil turned to his left and walked 3 km to D and Shashi walked to her right and walked 3 km to C. How far are they from each other?
   (1) 10 km (2) 12 km (3) 14 km
   (4) 16 km (5) None of these

8. Ram is facing North-West. He turns in clockwise direction by 90°, then 180° in the anti-clockwise direction and turns another 90° in the same direction. In which direction is he facing now?
   (1) South-West (2) West (3) South
   (4) South-East (5) None of these

9. Laxman went 15 km to North, then turned West and covered 10 km. Then he turned South and covered 5 km. Finally turning to East he covered 10 km. In which direction is he from the starting point?
   (1) East (2) West (3) North
   (4) South (5) None of these

10. Aman from a point, walks 4 miles North, turns to his right and walks 2 miles, again turns to his right and walks 2 miles, again turns to his right and walks 2 miles. In which direction would he be now with respect to the starting point?
    (1) North (2) South (3) East
    (4) West (5) None of these

11. Pran and Khan start from their office and walks in opposite direction, each travelling 10 km. Pran then turns left and walks 10 km, while Khan turns right and walks 10 km. How far are they now from each other?
    (1) 0 km (2) 5 km (3) 10 km
    (4) 20 km (5) None of these

12. A taxi driver commenced his journey from a point and drove 10 km towards North and turned to his left and drove another 5 km. After waiting to meet a friend here, he turned to his right and continued to drive another 10 km. He has covered a distance of 25 km so far, but in which direction would he be now?
    (1) South (2) North (3) East
    (4) South-East (5) None of these

13. If A stand on his head with his face towards North, in which direction will his left hand point?
    (1) North-East (2) North (3) East
    (4) North-West (5) None of these

14. A car travelling towards South covers a distance of 8 km, then turns right and runs another 9 km and again turns to the right and stopped. In which direction does it face now?
(1) South (2) North (3) West
(4) East (5) None of these

15. A man starts from a point walks 2 km towards North, turns towards his right and walks 2 km, turns right again and walks. In which direction is he going now?
(1) South (2) South-East
(3) North (4) West
(5) None of these

16. Harihar starts walking straight facing South. After walking 30 m he turned to his right, walked 25 m and turned to his left. Again after walking a distance of 10 m he turned to his left. In which direction is he facing now?
(1) West (2) East
(3) North-East (4) South-West
(5) None of these

17. Ashok walked 5 m towards East, took a right turn and walked 10 m and again he took a right turn and walked 15 m. In which direction is he facing now?
(1) South (2) West (3) North
(4) South-West (5) None of these

18. Q walked 20 m towards West, took a left turn and walked 20 m. He then took a left turn and walked 20 m and again took a right turn and walked 20 m. How far is Q now from the starting point?
(1) 40 m (2) 50 m (3) 80 m
(4) Data inadequate (5) None of these

19. Tom walked 10 miles from point P towards the East. He then took right turn and walked 5 miles and taking another right turn walked again for another 5 miles. In which direction is point P from where Tom is standing now?
(1) West (2) North-West
(3) North-East (4) Can't be determined
(5) None of these

20. Shyam walked 6 m towards East, then took a right turn and walked a distance of 9 m. He then took a left turn and walked a distance of 6 m. How far is he from the starting point?
(1) 15 m (2) 21 m (3) 18 m
(4) Can't be determined (5) None of these

21. Prabir started walking towards South. He took a right turn after walking 10 m. He again took a left turn after walking 20 m. In which direction is he facing now?
(1) South (2) North (3) West
(4) East (5) Can't be determined

22. Raman starts from point P and walks toward South and stops at point Q. He now takes a right turn followed by a left turn and stops at point R. He finally takes a left turn and stops at point S. If he walks 5 km before taking each turn, towards which direction will Raman have to walk from point S to reach point Q?
(1) North (2) South (3) West
(4) East (5) North-West

23. Kunal walked 10 m towards the East, turned right and walked another 15 m. Then he turns left and walks 3 m. He finally takes a left turn and walked 6 m. In which direction is he facing now?
(1) East (2) North (3) West
(4) South (5) South-West

24. Ahmed is standing to the West of Amit and North of Rachna. Satish is standing to the West of Rachna but to the South of Samir. Satish is in which direction from Amit?
(1) West (2) South-West
(3) South (4) South-East
(5) None of these

25. Mohan walked 40 m towards North, took a left turn and walked 20 m. He again took a left turn and walked 40 m. How far and in which direction is he from the starting point?
(1) 20 m East
(2) 20 m North
(3) 20 m South
(4) 100 m South
(5) None of these

26. Samir was standing facing East. He turned to his right and walked 5 m, again turned to his right and walked 7 m. Then he turned to his left and walked 4 m. In which direction is he facing now?
(1) North (2) South (3) West
(4) North-West (5) None of these

27. If M is in the South of B and B is in the West of N, then in which direction is N from M?

(1) North (2) East

(3) North-East (4) South-West

(5) None of these

28. Naveen walks 20 m towards East. He then turns left and walks 10 m. He again turns left and walks 20 m. How far is he from his starting point?

(1) 10 m (2) 50 m (3) 40 m

(4) 30 m (5) None of these

29. Mohan starts walking towards East and walked 30 m, then he turned right and walked 50 m and he again turned left and walked 40 m. Again he turned left and walked 50 m. Now, how far is he from his starting point?

(1) 170 m (2) 70 m (3) 120 m

(4) 110 m (5) None of these

30. A walks 10 m North, then he turns right and walks 10 m. And then turning left each time, he walks 5 m, 15 m and 15 m respectively. Now, how far is he from his starting point.

(1) 5 m (2) 10 m (3) 15 m

(4) 20 m (5) None of these

31. Praveen walked 30 m towards East, then he turned right and walked 20 m. Again he turned right and walked 30 m. How far is he from his starting point?

(1) 30 m (2) 80 m (3) 50 m

(4) 20 m (5) None of these

32. Atul walks 20 m towards South. He then turns left and walks 30 m. After that he turns right and walks 10 m. Then again he turns right and walks 40 m. After this he turns right and walks 30 m. Now he stops. Now in which direction is he from his starting point?

(1) South-West

(2) West

(3) North-West

(4) Starting point

(5) None of these

33. Amit walked 20 m towards West; turned right and walked 30 m, again he turned right and walked 20 m. How far was he from his starting point?

(1) 70 m (2) 40 m (3) 30 m

(4) 50 m (5) None of these

34. Dhanesh walks 50 m East and then he turns to his right and walks 30 m. Now in which direction is he from his starting point?

(1) South-West (2) North-East

(3) North-West (4) South-East

(5) None of these

35. Four persons A, B, C and D are sitting along the different sides of a table. B is sitting towards left of A. C who is facing West, is sitting to the right of D. Who is facing South?

(1) A (2) B (3) B or D

(4) Data inadequate (5) None of these

36. Five persons P, Q, R, S and T are sitting around a round table. Q is sitting between T and S. P is not immediate left of S, then who is sitting second to the right of Q?

(1) P (2) R (3) S

(4) Data inadequate (5) None of these

37. Q walked 20 m towards West, turned left and walked 20 m, then he turned right and walked 20 m and again turned right and walked 20 m. Now how far is Q from his starting point?

(1) 40 m (2) 50 m (3) 80 m

(4) Data inadequate (5) None of these

38. If North-East becomes West and South-East becomes North then what will West become?

(1) South-East

(2) North-East

(3) South

(4) North-West

(5) None of these

39. Imagine that you are walking towards South. After sometime you turn left. Then again you turn left. After that you turn right and once again turn to the right. In which direction you are walking now?

(1) East (2) West (3) South

(4) North (5) None of these

40. Manish and Rinku starts waking from a same point. Manish goes towards West and covers 4 km. and then he turns right and goes 3 km. Rinku goes towards North and covers 3 km, then turns right and goes 5 km. How far is Manish from the Rinku now?

(1) 1 km (2) 3 km (3) 9 km
(4) 7 km (5) None of these

41. Sarla says to Suresh that she is going to the North direction to hide, but she went 2 km East from there and then 3 km towards South and again 2 km towards West and then again same distance towards the starting place. Now in which direction is Sarla from her hiding place?

(1) North (2) South (3) West
(4) East (5) None of these

42. Four friends are sitting along the different sides of a square table. Meena is sitting to the different right of Padma and Beena is sitting to the left of Krishna. Which of the two friends are sitting opposite to each other while Krishna is sitting to the left of Padma?

(1) Padma and Krishna
(2) Krishna and Beena
(3) Beena and Meena
(4) Meena and Krishna
(5) Padma and Meena

43. Girija, Ishan, Frensis and Hema are sitting on a bench. Hema is sitting ahead and to the immediate left of Frensis. On one side of Ishan Frensis is sitting and to his other side Girija is sitting. Who is sitting to the extreme right?

(1) Girija (2) Ishan (3) Frensis
(4) Hema (5) None of these

44. 5 books have been kept such that, E is just above A. C is just below the D. A is just above D. B is just below C. Which book is at the bottom?

(1) A (2) D (3) B
(4) C (5) None of these

45. I am standing on a river shore with my back towards the river. An object in the water flows on its own from my left and goes to my right. River is flowing from West to East, then in which direction am I facing?

(1) East (2) West (3) North
(4) South (5) None of these

46. My house's door faces the East. Sriram's house is attached to the back wall of my house, whose door is exactly in the opposite direction of my house but it is on the main road. Towards which direction the door of Sriram's house on the other side of the road will face?

(1) Towards East
(2) Towards West
(3) Towards North
(4) Towards South
(5) Question is not clear

47. Kamala is between Mohan and Suresh. Ramesh is on the immediate left of Suresh and Sohan is on the immediate right of Mohan. All are standing facing North, then who is on the extreme right?

(1) Mohan (2) Suresh (3) Ramesh
(4) Sohan (5) None of these

48. Ashok went 8 km South and turned West and walked 3 km, again he turned North and walked 5 km. He took a final turn to east and walked 3 km. In which direction was Ashok from the starting point?

(1) East (2) North (3) West
(4) South (5) None of these

Directions (49 - 50):

Kiran walks 20 m North, she turns right and walks 30 m, then she turns right and walks 35 m, then she turns left and walks 15 m, then she again turns left and walks 15 m. Once again she turns left and walks 15 m.

49. How far is Kiran from her starting point?

(1) 25 m (2) 15 m (3) 45 m
(4) 30 m (5) None of these

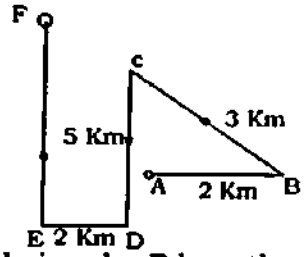
50. In which direction is Kiran facing now?

(1) East (2) West (3) North
(4) South (5) None of these

Paramount Coaching

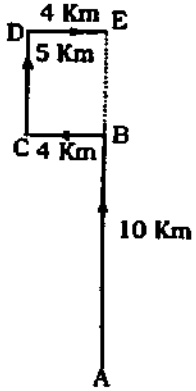
Answer with Explanations

1. 3;



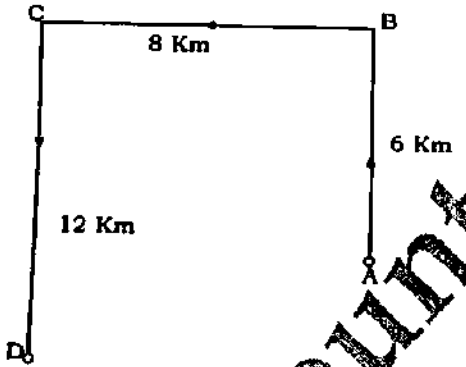
Obviously, F is to the North-West of A.

2. 3;



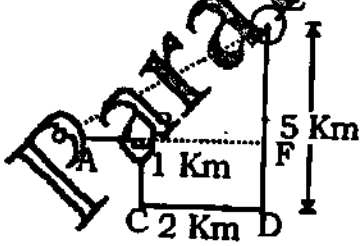
Hence, required distance
AE = AB + BE = AB + CD
= 10 + 5 = 15 Km

3. 2;



Obviously, Ram is facing South.

4. 2; We have to find out the distance between the two points A and E.



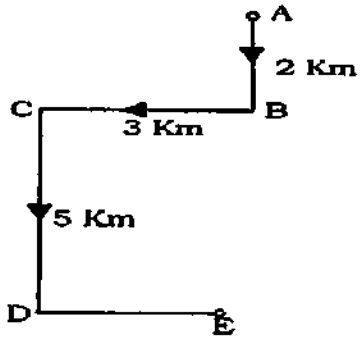
Here,

EF = DE - FD = 5 - 1 = 4 Km
AF = AB + CD = 1 + 2 = 3 Km

$\therefore$ AE = $\sqrt{(AF)^2 + (EF)^2} = \sqrt{3^2 + 4^2}$

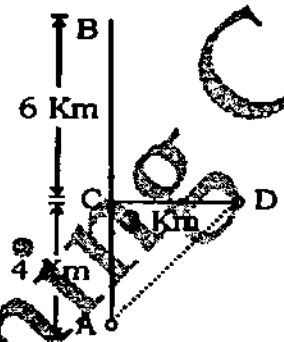
= $\sqrt{25}$ = 5 Km

5. 2;



Vishal is facing East (at the end of the journey)

6. 4;

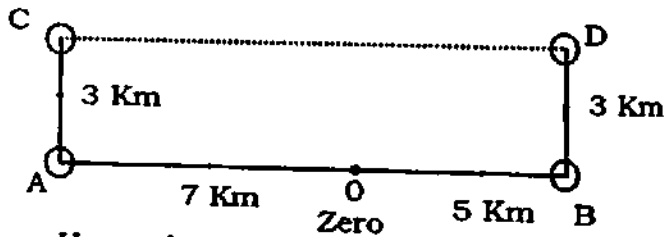


Here,

AD = $\sqrt{(AC)^2 + (CD)^2} = \sqrt{4^2 + 3^2}$

= $\sqrt{25}$ = 5 Km

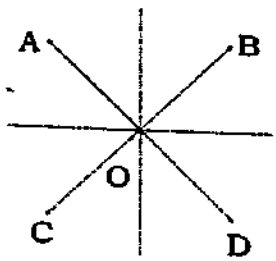
7. 2;



Here, the required distance,
CD = AB = 7 + 5 = 12 Km

Note:- CW = Clockwise, ACW = Anti-clockwise

8. 4;

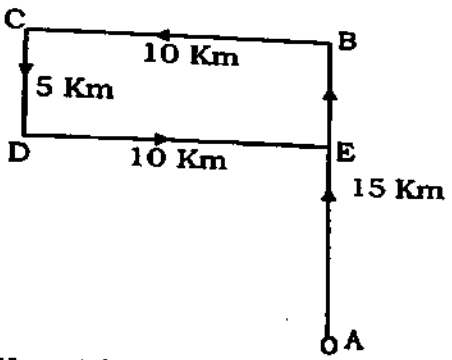


90° CW + 180° ACW + 90° ACW
= 180° ACW

from the original position. Thus, we can conclude that Ram is facing point D from the point O. Thus, he is facing South-East.

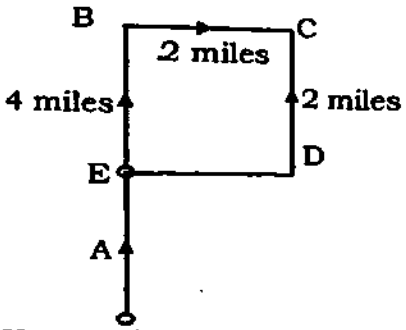
Paramount Coaching Centre

9. 3;



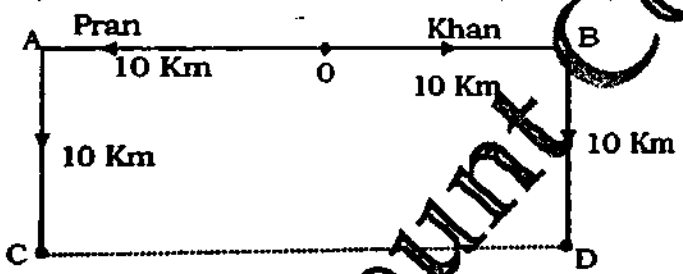
Here A is starting point. E is the final destination.
Now, it is clear that E is to the North of A.

10. 1;



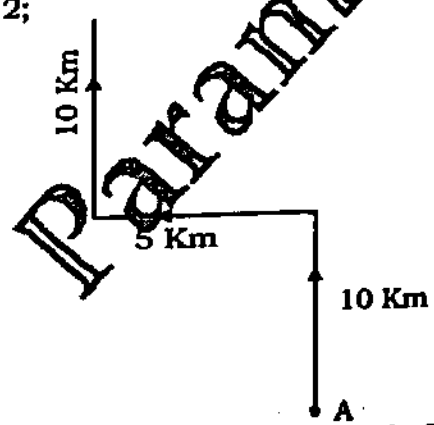
Here, A is starting point and E is the final destination. Now it is clear that E is to the North of A.

11. 4;



The required distance CD = AB = 10 + 10 = 20 Km

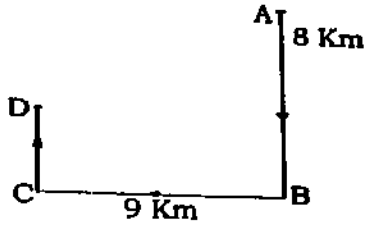
12. 2;



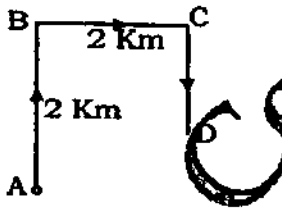
Obviously, the driver is facing North.

13. 3; If A stands on head with his face towards North, his left hand will point towards East whereas his right hand will point towards West.

14. 2;

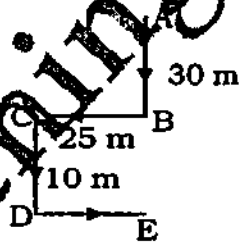


15. 1;



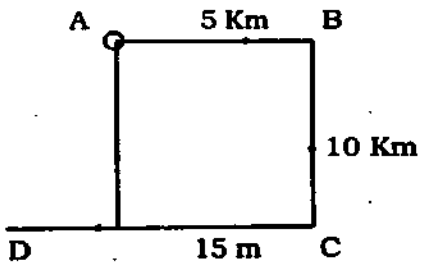
Now, it is obvious that the man is facing South.

16. 2;



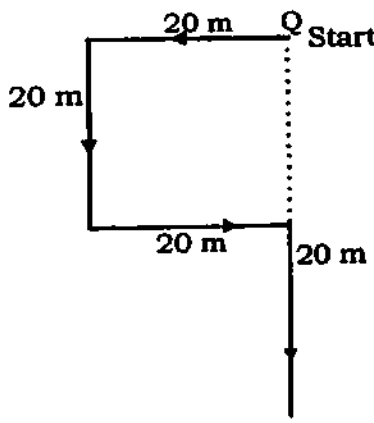
Now, it is obvious that Harihar is facing East.

17. 2;



Now, it is clear that Ashok is facing West.

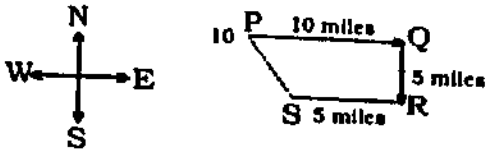
18. 1;



Required distance = (20 + 20) = 40 m.

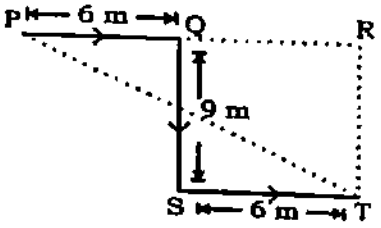
Paramount Coaching Centre

19. 2;



It is clear from the diagram that point P is in North-West direction.

20. 1;



In the above figure 'P' is starting point and 'T' is end point.

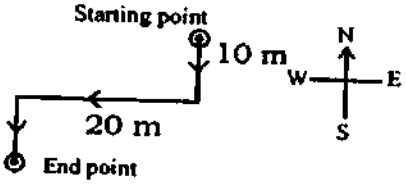
Now, $PT^2 = PR^2 + RT^2$

$PT = \sqrt{PR^2 + RT^2}$

$= \sqrt{12^2 + 9^2} = \sqrt{144 + 81} = \sqrt{225} = 15$ m

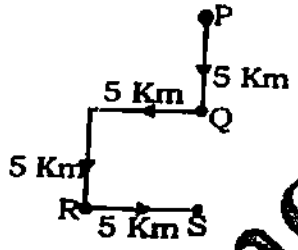
[$\because$ PR = PQ + ST and RT = QS]

21. 1;



From the above figure it is clear that Prabir is facing South.

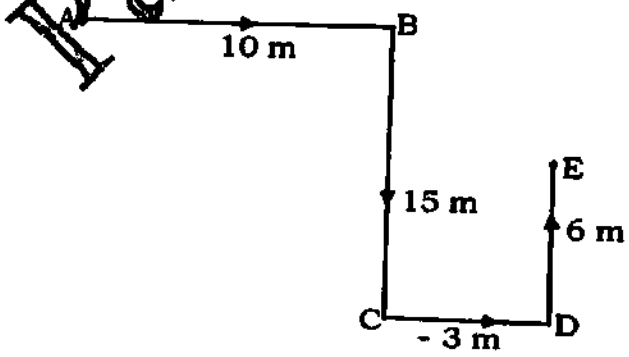
22. 1;



Here, P is starting point whereas S is end point.

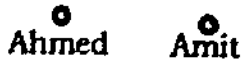
In order to reach point Q Raman has to travel towards North.

23. 2;



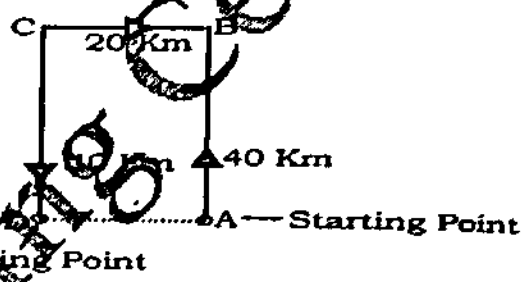
From the above diagram it is clear that Kunal is facing North.

24. 2;



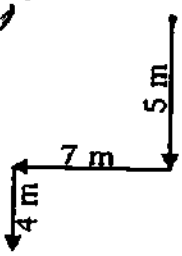
Look at the position of Satish and Amit. It is clear that Satish is to the south-west of Amit.

25. 5; 20 metres, West

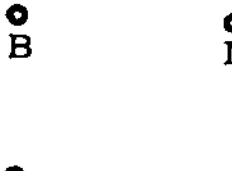


Hence, required distance
AD = BC = 20 m (West)

26. 2;

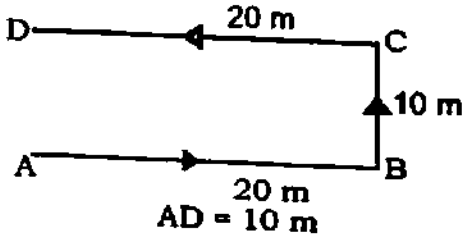


27. 3; Look at the positions of B, M and N.



Obviously N is to the North-east of M.

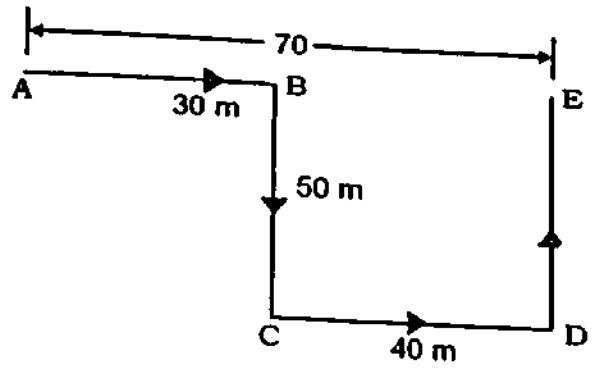
28. 1;



AD = 10 m

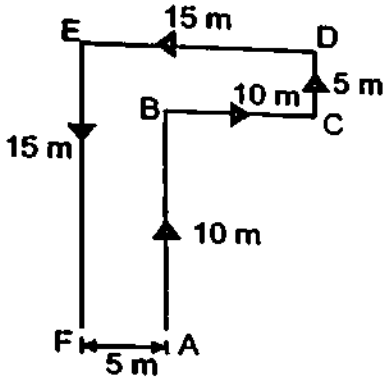
Paramount Coaching Centre

29. 2;



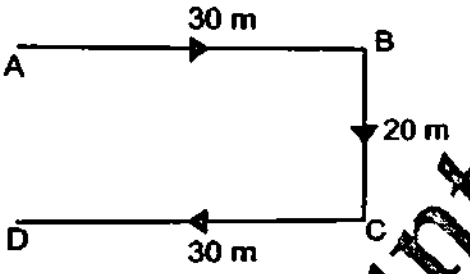
Obviously, AE = 30 + 40 = 70 m

30. 1;



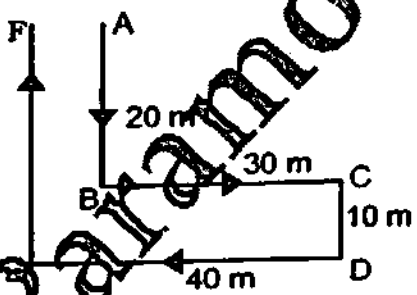
∴ AF = 5 m

31. 4;



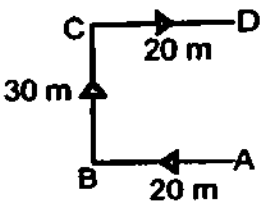
Here, AD = BC = 20 m

32. 2;



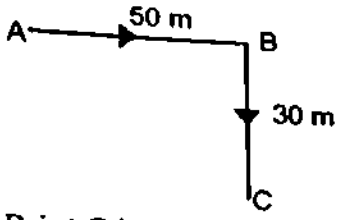
Obviously, F is to the West of A

33. 3;



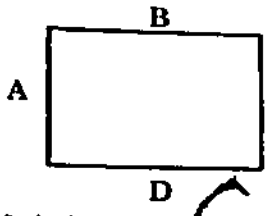
Obviously, AD = BC = 30 m.

34. 4;



Point C is to the South-east of A.

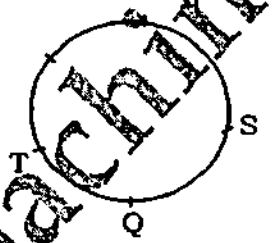
35. 2;



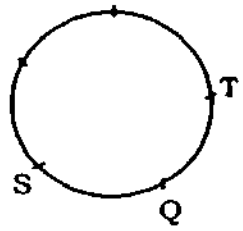
It is B who is facing South.

36. 4; P or R

We have information that Q is sitting between T and S. We get two possibilities Case I and Case II.

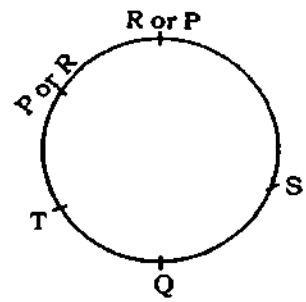


Case : I

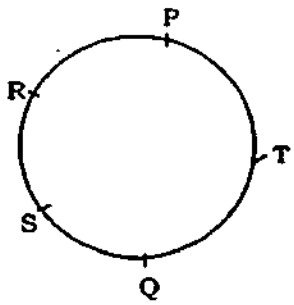


Case : II

If P is not immediate left of S, then we get



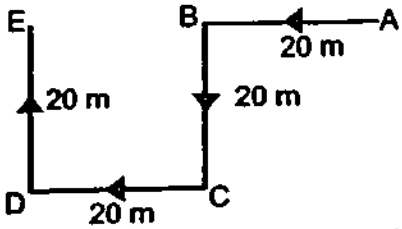
Case : I



Case : II

Now it is clear that the person sitting second to the right of Q is P or R.

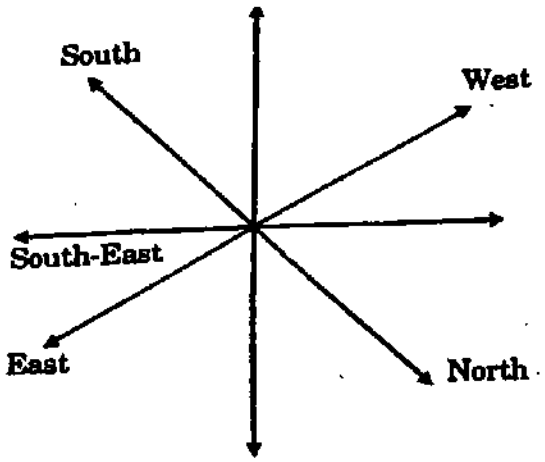
37. 1;



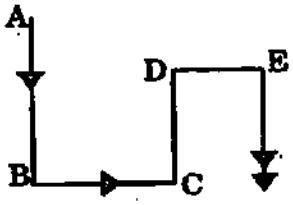
Obviously, AE = AB + DC
= 20 + 20
= 40 m

Paramount Coaching Centre

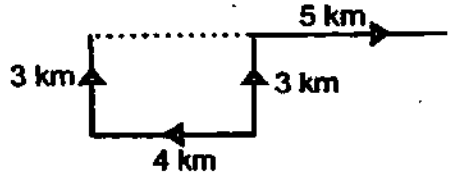
38. 1;



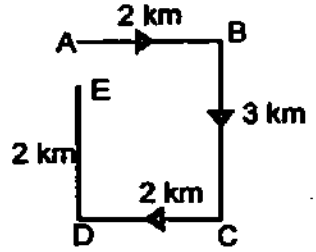
39. 3;



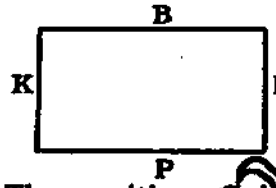
40. 3;



41. 2;



42. 4;



43. 1; The position of all the four persons will be as follows:

Hema Girija Ishan

Now, it is obvious that Girija is sitting on the extreme right end.

44. 3; The order of the five books are:

E

A

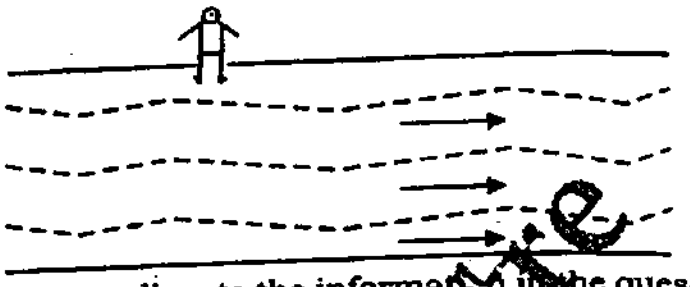
D

C

B

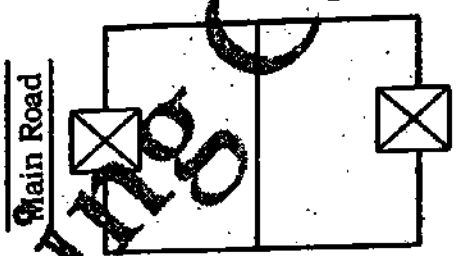
Now, it is clear that the book B is at bottom.

45. 3;



According to the information in the question part, the situation is as shown above. Now, it is clear that the person is facing North.

46. 2;



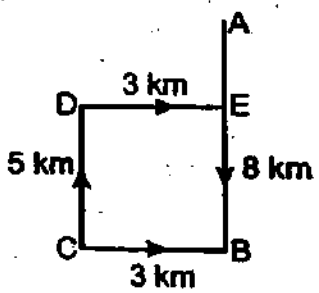
Look at the position of the two houses. It is clear that Sriram's house is facing West.

47. 4; The order of the person's are :

Ramesh Suresh Kamla Mohan Sohan

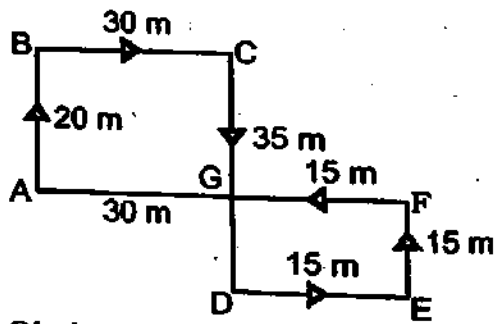
Now, if is clear that Sohan is sitting on extreme right position.

48. 4;



Obviously, E is to the South of A.

49. 4;



Obviously, AG = BC = 30 m

50. 2; West

Paramount Coaching Centre