DIRECTION & DISTANCE Questions, Answers & Explanation

EXERCISE

1. Q travels towards East. M travels towards North. S and T travel in opposite directions. T travels towards right of Q. Which of the following is definitely true?
   (a) M and S travel in theopposite directions.
   (b) S travels towards West.
   (c) T travels towards North.
   (d) M and S travel in the same direction.
2. P, Q, R, S and T are sitting around a circular table. R is to the right of P and is second to the left of S. T is not between P and S. Who is second to the left of R?
   (a) S (b) T
   (e) 0 (d) data inadequate
3. Of the five villages P, Q, R, S and T situated close to each other, P is to west of Q, R is to the south of P. T is to the north of Q, and S is to the east of T. Then, R is in which direction with respect to S?
   (a) North-West (b) South-East
   (c) South-West (d) Data Inadequate
4. M is to the East of D, F is to the South of D and K is to the West of F. M is in which direction with respect to K?
   (a) South-West (b) North-West
   (c) North-East (d) South-East
5. After 4 pm on a sunny day when Ramesh was returning from his school, he saw his uncle coming in the opposite direction. His uncle talked to him for some time. Ramesh saw that the shadow of his uncle was to his right side. Which direction was his uncle facing during their talk?
   (a) North (b) South
   (0) East (d) Data inadequate
6. A and B are standing at a distance of 20 km from each other on a straight East-West road. A and B start walking simultaneously, eastwards and westwards respectively, and both cover a distance of 5 km. Then A turns to his left and walks 10 km. 'B' turns to his right and walks 10 km and at the same speed. Then both turn to their left and cover a distance of 5 km at the same speed. What will be the distance between them?
   (a) 10km (b) 5km
   (c) 20km (d) 25 km
7. Alok walked 30 metres towards east and took a right turn and walked 40 metres. He again took a right turn and walked50 metres. Towards which direction is he from his starting point?
   (a) South (b) West
   (c) South-West (d) South-East
8. Ruchi's house is to the right of Vani's house at a distance of 20 metres in the same row facing North. Shabana's house i in the North- East direction of Vani's house at a distance of 25 metres. Determine that Ruchi's house is in which direction with respect of Shabana's house?
   (a) North-East (b) East
   (c) South (d) West
9. Y is to the East of X, which is to the North of Z. If P is to the South of Z, then P is in which direction with respect to Y?
   (a) North (b) South
   (c) South-East (d) None of these
10. One afternoon, Manisha and Madhuri were talking to each other face to face in Bhopal on M.G. Road. If Manisha's shadow was exactly to the left of Madhuri, which direction was Manisha facing?
    (a) North (b) South
    (c) East (d) Data inadequate
11. 'X' started walking straight towards South, He walked a distance of 5 metres and then took a left turn and walked a distance of 3 metres. Then

he took a right turn and walked a distance of 5 metres again. 'X' is facing which direction now?
(a) North-East (b) South
(c) North (d) South-West

12. If A is to the south of B and C is to the east of B, in what direction is A with respect to C?
(a) North-east (b) North-west
(c) South-east (d) South-west

13. One morning after sunrise, Gopal was facing a pole. The shadow of the pole fell exactly to his right. Which direction was he facing?
(a) South (b) East
(c) West (d) Data inadequate

14. A boy rode his bicycle northwards, then turned left and rode one km and again turned left and rode 2 km. He found himself exactly one km west of his starting point. How far did he ride northwards initially?
(a) 1 km (b) 2km
(c) 3 km (d) 5 km.

15. Ravi wants to go to the university which is opposite to theatre. He starts from his home which is in the East and come to a crossing. The road to the left ends is a theatre, straight ahead is the hospital- In which direction is the university?
(a) North (b) South
(c) East (d) West

16. 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 to left, runs 12' and finally turns to left and runs 6'. Now, which direction is the rat facing?
(a) East (b) West
(c) North (d) South

17. If South-east becomes North, North-east becomes west and so on, what will West become?
(a) North-east (b) North-west
(c) South-east (d) South-west

18. P, Q, R and S are playing a game of carrom. P, R and S, Q are partners. S is to the right of R who is facing west. Then, Q is facing
(a) North (b) South
(c) East (d) West

19. A and B start walking, from a point, in opposite directions. A covers 3 km and B covers 4 km. Then A turns right and walks 4 km while B turns left and walks 3 km. How far is each from the starting point?
(a) 5 km (b) 4km
(c) 10km (d) 8km

20. Anuj started walking positioning his back towards the sun. After sometime, he turned left, then turned right and then towards the left again. In which direction is he going now?
(a) North or South (b) East or West
(c) North or West (d) South or West

21. From her home, Prema wishes to go to school. From home, she goes towards North and then turns left and then turns right, and finally she turns left and reaches school. In which direction her school is situated with respect to her home?
(a) North-East (b) North-West
(c) South-East (d) South-West

22. One day, Ravi left home and cycled 10 km southwards, turned right and cycled 5 km and turned right and cycled 10 km and turned left and cycled 10 km. How many kilometres will he have to cycle to reach his home straight?
(a) 10km (b) 15km
(c) 20 km (d) 25 km

23. Rasik walks 20 m North. Then, he turns right and walks 30 m. Then he turns right and walks 35 m. Then he turns left and walks 15 m. Then he again turns left and walks 15 m. In which direction and how many metres away is he from his original position?
(a) 15 metres West (b) 30 metres East
(c) 30 metres West (d) 45 metres East

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24. From his house, Lokesh went 15 km to the North. Then he 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 his house?
(a) East (b) West
(c) North (d) South

25. Kailash faces towards north. Turnings to his right, he walks 25 metres. He then turns to his left and walks 30 metres. Next, he moves 25 metres to his right. He then turns to the right again and walks 55 metres. Finally, he turns to the right and moves 40 metres. In which direction is he now from his starting point?
(a) South-West (b) South
(c) North-West (d) South-East

26. A clock is so placed that at 12 noon its minute hand points towards north-east. In which direction does its hour hand point at 1:30 pm?
(a) North (b) South
(c) East (d) West

27. One evening before sunset two friends Sumit and Mohitwere talking to each other face to face. If Mohit's shadow was exactly to his right side, which direction was Sumit facing? (a) North
(b) South
(c) West (d) Data inadequate

28. Rohit walked 25 metres towards South. Then he turned to his left and walked 20 metres. He then turned to his left and walked 25 metres. He again turned to his right and walked 15 metres. At what distance is he from the starting point and in which direction?
(a) 35 metres East (b) 35 metres North
(c) 40 metres East (d) 60 metres East

29. One morning after sunrise, Reeta and Kavita were talking to each other face to face atTilak Square. If Kavita's shadow was Exactly to the right to Reeta, which direction Kavita was facing
(a) North (b) South
(c) East (d) Data inadequate

30. I am facing east. I turn 100° in the clockwise direction and then 145° in the anticlockwise direction. Which direction am I facing now?
(a) East (b) North-east
(c) North (d) South-west

31. A man is facing north-west. He turns 90° in the clockwise direction, then 180° in the anticlockwise direction and then another 90° in the same direction. Which direction is he facing now?
(a) South (b) South-west
(c) West (d) South-east

32. A man is facing west. He runs 45° in the clockwise direction and then another 180° in the same direction and then 270° in the anticlockwise direction. Which direction is he facing now?
(a) South (b) North-west
(c) West (d) South-west

33. Ganesh cycles towards South West a distance of 8 m, then he moves towards East a distance of 20 m. From there he moves towards North East a distance of 8 m, then he moves towards west a distance of 6 m. From there he moves towards North-East a distance of 2m. Then he moves towards west a distance of 4 m and then towards south west 2 km and stop at that point. How far is he from the starting point?
(a) 12m (b) 10m
(c) 8m (d) 6m

34. From my house I worked 5 km towards North. I turned rightand walked 3 km. Again I went one km to south How far am I from my house?
(a) 7km (b) 6km
(c) 4km (d) 5km

35. Ram left home and walked 5 km southward, turned right and walked 2 km and turned right and walked 5 km and turned left and walked 5

km. How many km will he have to walk to reach his home starting?
(a) 5 (b) 7
(c) 17 (d) 15

36. Going 60 m to the south of his house. Kiran turn left andgoes another 20 m, then turning to the North.He goes 40 m and then starting walking to his house. Inwhich direction is his house from there?
(a) South-East (b) North
(c) East (d) North-West

37. Ram started walking towards East after 1 km. He turned south and walked 5 km. Again he turned East and walked 2 km. Finally he turned North and walked 9 km. How far is he from the starting point?
(a) 7km (b) 3 km
(c) 4km (d) 5km

38. Sobha was facing East. She walked 20 metres. Turning left she moved 15 metres and then turning right moved 25 metres. Finally, she turned right and moved 15 metres more. How far is she from her starting point?
(a) 25 metres (b) 35 metres
(c) 50 metres (d) 45 metres

39. Jatin leaves his house and walks 12 km towards North. He turns right and walks another 12 km. He turns right, walks 12 km more and turns left to walk 5 km. How far is he from his home and in which direction?
(a) 7 km east (b) 10 km east
(c) 17 km east (d) 24 km east

40. Deepak starts walking straight towards east. After walking 75 metres, he turns to the left and walks 25 metres straight. Again he turns to the left, walks a distance of 40 metres straight, again he turns to the left and walks a distance of 25 metres. How far is he from the starting point?
(a) 25 metres (b) 50 metres
(c) 115 metres (d) 35 metres

41. If a person is walking towards North, what direction should he follow so that he is walking towards West?
(a) 1 right, right, left (b) left, left, right
(c) left, right, left (d) left, left, left

42. A watch read 4.30. If the minute hand points East, in what direction will the hour hand point?
(a) North (b) North west
(c) South-east (d) North-east

43. A person stood alone in a desert on a dark night and wanted to reach his village which was situated 5 km east of the point where he was standing. He had no instruments to find the direction but he located the polestar. The most convenient way now to reach his village is to walk in the
(a) direction facing the polestar
(b) direction opposite to the polestar
(c) direction keeping the polestar to his left
(d) direction keeping the polestar to his right

44. A person travels 12 km due North, then 15 km due East, after that 15 km due West and then 18 km due South. How far is he from the starting point?
(a) 6 km (b) 12 km
(c) 33 km (d) 60 km

45. Priya starts walking in the afternoon facing the Sun. After some time, she turned to the right. Later again, she turned to her left and again also left. At what direction is Priya moving now?
(a) East (b) West
(c) North (d) South

46. Asha drives 6 km towards West and turns to the right and drives 3 km. Then, she turns again and drives towards right hand and drives 6 km. How far is she from her starting point? In which direction would she be driving?
(a) 6km East (b) 3 km West
(c) 3 km East (d) 6 km North

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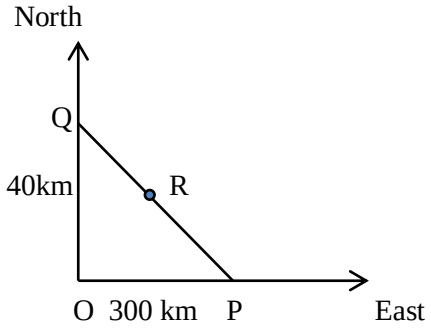
47. In the given figure, P is 300 km eastward of O and Q is 400 km north of O. R is exactly in the middle of Q and P. The distance between Q and R is



(a) 250 km (b) $100\sqrt{3}$ km
(c) 500 km (d) 125 km

48. The houses of A and B face each other on a road going north-south, A's being on the western side. A comes out of his house, turns left, travels 5 km, turns right, travels 5 km to the front of D's house. B does exactly the same and reaches the front of C's house. In this context, which one of the following statements is correct?
(a) C and D live on the same street.
(b) C's house faces south.
(c) The houses of C and D are less than 20 km apart.
(d) None of the above

49. If M is in North-east of N and P in South-West of N then (i) P is in the South of N and (ii) N is between M and P. Out of these two statements (i) and (ii) which is/are correct?
(a) (i) and (ii) both are correct
(b) (i) and (ii) both are wrong
(c) only (i) is correct
(d) only (ii) is correct

50. Five persons A, B, C, D and E are standing in a row. B is between A and C and D is between C and E. If the distance of C from B is equal to the distance of D from C, what is the relation between the distances of A to B and B to E?
(a) Both are equal
(b) AB is smaller than BE
(c) A B is larger than BE
(d) There is no relation in AB and BE

51. The post office is in the East of the school while my house is in the South of the school. The market is in the North of the post office. If the distance of the market from the post-office is equal to the distance of my house from the school, in which direction is the market with respect to my house?
(a) North (b) East
(c) North-east (d) South-west

52. A person stood alone in a desert on a dark night and wanted to reach his village which was situated 5 km east of the point where he was standing. He had no instruments to find the direction but he located the polestar. The most convenient way now to reach his village is to walk in the
(a) direction facing the polestar
(b) direction opposite to the polestar
(c) direction keeping the polestar to his left
(d) direction keeping the polestar to his right

53. The length and breadth of a room are 8 m and 6 m respectively. A cat runs along all the four walls and finally along a diagonal order to catch a rat. How much total distance is covered by the cat?
(a) 10 (b) 14
(c) 38 (d) 48

54. Two lathes and two men are playing bridge a card game and seated at North, East, South and West of a table. No lady is facing East. Persons sitting opposite to each other arc not of the same gender. One man is facing South. Which directions are the lathes facing?
(a) East and west (b) South and east
(c) North and west (d) North and east

55. Consider the following statements :

There are six villages A, B, C, D, E and F.
F is 1 km to the west of D.
B is I km to the east of E.
A is 2 km to the north of E.
C is 1 km to the east of A.
D is 1 km to the south of A.
Which three villages are in a line?
(a) A, C, B (b) A, D, E
(c) C, B, F (d) E, B, D

56. If all the directions are rotated, i.e., if North is changed to West and East to North and so on, then what will come in place of North-West ?
(a) South-west (b) North-east
(c) East-north (d) East-west

57. In a meeting, the map of a village was placed in such a manner that south-east becomes north, north-east becomes west and so on. What will south become?
(a) North (b) North-east
(c) North-west (d) West

58. A is 40 m south-west of B. C is 40 m south-east of B. Then C is in which direction of A?
(a) East (b) South
(c) West (d) North

59. Gaurav walks 20 metres towards North. He then turns left and walks 40 metres. He again turns left and walks 20 metres. Further, he moves 20 metres after turning to the right. How far is he from his original position?
(a) 55 m (b) 60 m
(c) 65 m (d) 50 m

60. My friend and I started walking simultaneously towards each other from two places 100 m apart. After walking 30 m, my friend turns left and goes 10 m, then he turns right and goes 20 m and then turns right again and comes back to the road on which he had started walking. If we walk with the same speed, what is the distance between us at this point of time?
(a) 50m (b) 60m
(c) 40m (d) 45m

61. A square Held ABCD of side 90 m is so located that its diagonal AC is from north to south and the corner B is to the west of D. Rohan and Rahul start walking along the sides from B and C respectively in the clockwise and anticlockwise directions with speeds of 8 km/hr and 10 km/hr. Where will they cross each other the second time?
(a) On AD at a distance of 30 m from A
(b) On BC at a distance of 10m from B
(c) On AD at a distance of 30 m from D
(d) On BC at a distance of 10 m from C

62. If South East becomes North, then what will South West become?
(a) North (b) West
(c) East (d) North West

63. A man coming out of the backdoor of his house which is facing East, walked for one kilometre, turned to his right and walked for another kilometre. Then he turned to his right and walked a kilometre again. Where was he from his house at the end?
(a) 1 km away in north
(b) I km away in south
(c) 1 km away in east
(d) 1 km away in west

64. Two squads of solthers A and B, facing East and West respectively received the following commands - Left Turn, About Turn, Right Turn, Left Turn. Which directions would the squads A and B face at the end?
(a) East, West (b) West, East
(c) North, South (d) South, North

65. A direction pole was situated on the crossing. Due to an accident, the pole turned in such a manner that the pointer which was showing East started showing South. One traveller went to the wrong direction thinking it to be west. In what direction actually was he travelling?

(a) South (b) East
(c) West (d) North

66. Dinesh and Ramesh start together from a certain point in the opposite direction on motorcycles. The speed of Dinesh is 60 km per hour and Ramesh 44 km per hour. What will be the distance between them after 15 minutes?
(a) 20 km (b) 24 km
(c) 26 km (d) 30 km

67. An insect is walking in straight line. It covers a 15 cm per minute. It comes back 2.5 cm after every 15 cm. How long will it take to cover a distance of 1 metre?
(a) 6.5 min (b) 8min
(c) 10 min (d) 12 min

68. Four players P. Q. R and S are standing a play filed in such a way that Q is to East of P, R is to the South of P and S is to the North of P. In which direction of Q is S Standing?
(a) North (b) South
(c) North-West (d) South-East

69. A cyclist goes 30 km to North and then turning to goes 40 km. Again he turns to his right and goes 20 km. After this he turns to his right and goes 40 km. How far is the from his starting point?
(a) 0 km. (b) 10 km.
(c) 25 km. (d) 40 km.

70. A boy from his home, first walks 20 m in north-West direction then 20 m in South - West direction. Next, he walks 20m South - East direction. Finally, he turns towards his house. In which direction is he moving?
(a) North - West (b) North-East
(c) South - West (d) South - East

71. A person walks towards his house at 8.00 am and observes his shadow to his right. In which direction he is walking
(a) North (b) South
(c) East (d) West

72. A boat moves from a jetty towards East. After sailing for 9 nautical miles, she turns towards right and covers another 12 nautical miles. If she wants to go back to the jetty, what is the shortest distance now from her present position?
(a) 21 nautical miles (b) 20 nautical miles
(c) 18 nautical miles (d) 15 nautical miles

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ANSWER KEY																	
1	(d)	9	(d)	17	(c)	25	(d)	33	(b)	41	(b)	49	(d)	57	(b)	65	(d)
2	(c)	10	(a)	18	(a)	26	(c)	34	(d)	42	(d)	50	(b)	58	(a)	66	(c)
3	(c)	11	(b)	19	(a)	27	(b)	35	(b)	43	(c)	51	(c)	59	(b)	67	(b)
4	(c)	12	(d)	20	(a)	28	(a)	36	(d)	44	(a)	52	(c)	60	(a)	68	(c)
5	(b)	13	(a)	21	(b)	29	(a)	37	(d)	45	(d)	S3	(c)	61	(d)	69	(b)
6	(a)	14	(b)	22	(b)	30	(b)	38	(d)	46	(c)	54	(c)	62	(c)	70	(b)
7	(c)	15	(a)	23	(d)	31	(d)	39	(c)	47	(a)	55	(b)	63	(a)	71	(b)
8	(c)	16	(c)	24	(c)	32	(d)	40	(d)	48	(c)	56	(a)	64	(d)	72	(d)

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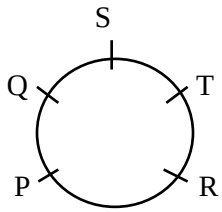
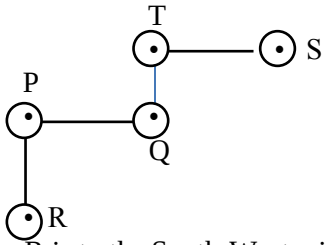
1. We have been given that Q travels towards East and M travels towards North. Now, T travels towards right of Q implies that T travels towards South. Hence, S travels towards North (because S and T Travel in opposite directions). Therefore, it is definitely true that M and S travel in the same direction i.e., North.

2. (c)



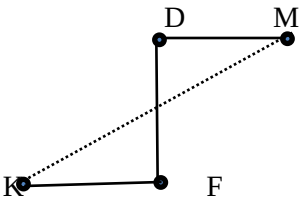
Q is second to the left of R.

3. (c)



Hence, R is to the South-West with respect to S.

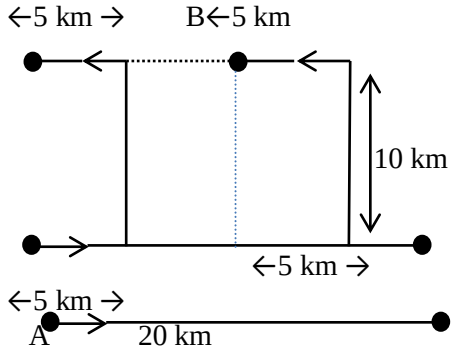
4. (c)



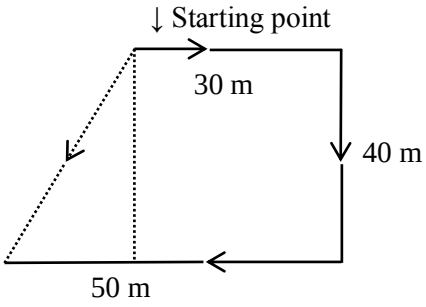
M is to the North-East of K.

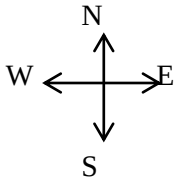
5. (b) After 4 pm the shadow will be towards East. Now, East is to the right of Ramesh. So Ramesh faces North. And his uncle, who is opposite him, faces South.

6. (a)

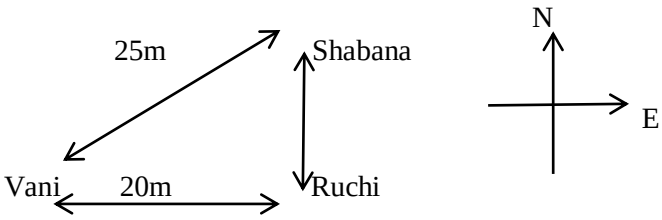


7. (c)

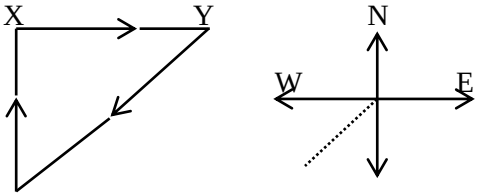




8. (c)



9. d)



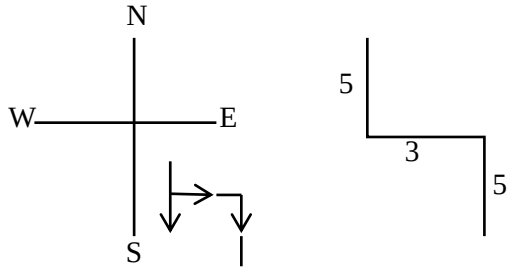
Z

SW

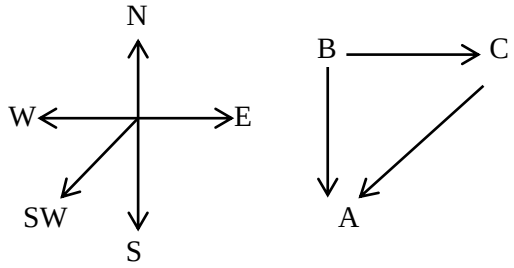
P S

10. (a) In the afternoon the sun is in the west. Hence the shadow is in the east. Now, east is to the left of Madhuri. So, Madhuri is facing south. Therefore, Manisha, who is face to face with Madhuri, is facing north.

11. (b)

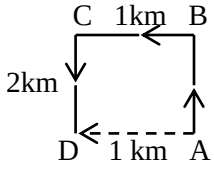


12. (d) Clearly, comparing the direction of A w.r.t. C in thes econd diagram with that in the first diagram, A will be south-west of C.

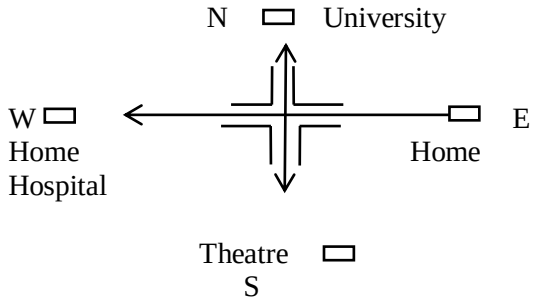


13. (a) The Sun rises in the east. So, in morning, the shadow falls towards the west. Now, shadow of pole falls to the right of Gopal. Therefore, Gopal's right side is the west. So, he is facing South.

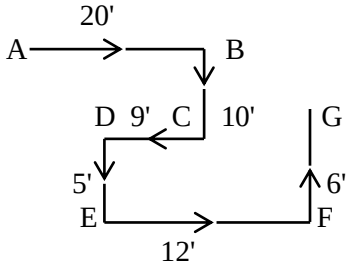
14. (b) Clearly, the boy rode from A to B, then to C and finally up to D. Since D lies to the west of A, so required distance =AB = CD = 2 km.



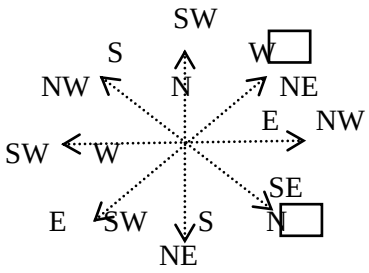
15. (a) Starting from his house in the East, Ravi moves west wards. Then, the theatre, which is to the left, will be in the South. The hospital, which is straight ahead, will be to the West. So, the University will be to the North.



16. (c) The movements of rat are as shown in figure. Clearly, it is finally walking in the direction FG i.e. North.

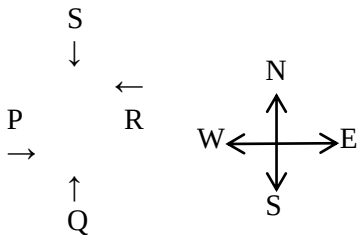


17. (c) Here, each direction moves 90° + 45° = 135° (Anti-clockwise)

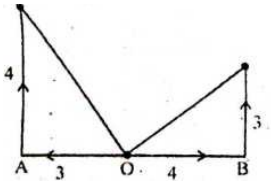


18. (a) Here, R faces towards West. S is to the right of R. So, S is facing towards South. Thus, Q who is the partner of S. will face towards North.

DIRECTION & DISTANCE Questions, Answers & Explanation

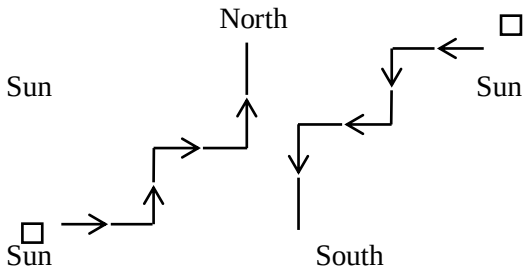


19. (a) Here, O is starting point.

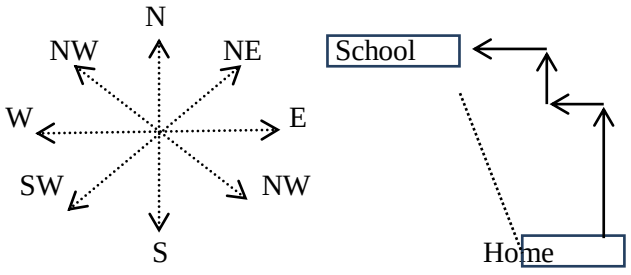


Both A and B are $\sqrt{3^2+4^2}$ = 5 km from the starting point.

20. (a) Clearly, there are two possible movements of Anuj as shown below:



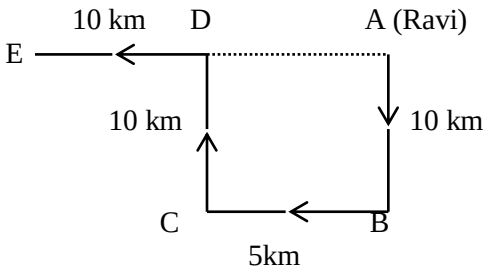
21. (b)



It is clear from the diagram that school is in North-west direction with respect to home.

22. (b) Here, Ravi starts from home at A. moves 10 km southwards up to B, turns right and moves 10 km up to C, turns right again and moves 10 km up to D finally turns left and moves 10 km up to E.

Thus his distance from initial position A=AE
=AD+DE
= BC+DE = (5 +10) km = 15 km.

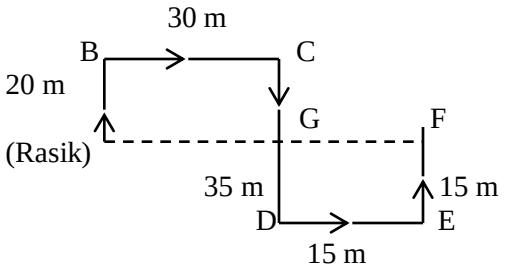


23. (d) The movements of Rasik from A to F arc as shown in figure.

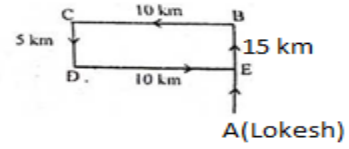
Since CD =AB+EF, so F lies in line with A.

Rasik's distance from original position A = AF
= (AG + GF) = (BC + DE)=(30+15) m=45m.

Also, F lies to the east of A.

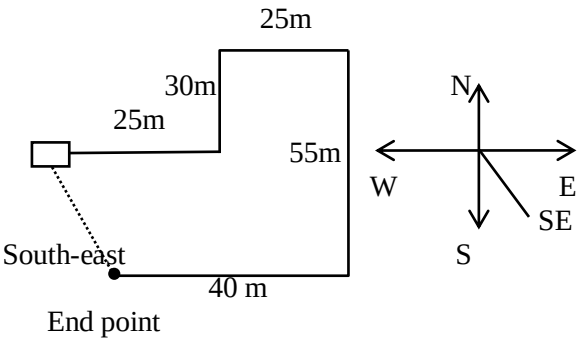


24. (c) The movements of Lokesh are as shown in figure, (A to B, B to C, C to D, D to E). Clearly, his final position is E which is to the North of his house A.

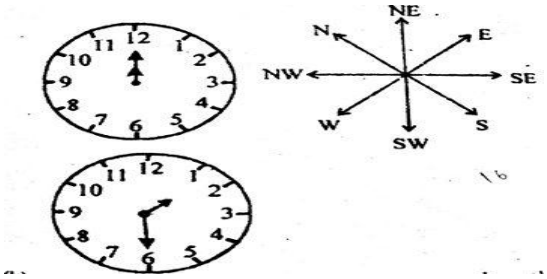


25. (d)

DIRECTION & DISTANCE Questions, Answers & Explanation

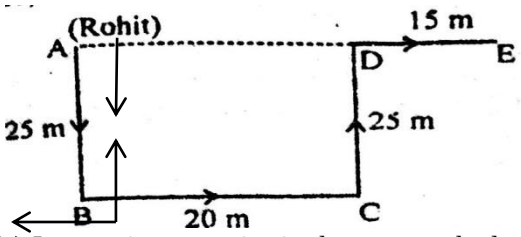


26. (c) The positions of the minute and hour hands at 12 noon and 1:30 p.m. are as shown in the diagram. Comparing with direction figure, we see that the hour hand at 1:30 p.m. points towards the East.

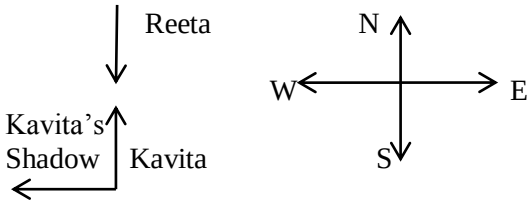


27. (b) In the evening, sun in the west and so the shadows fall towards east. So, Mohit's shadow fell towards east. Now, since Mohit's shadow fell towards right, therefore, Mohit is facing North. So Surnit, standing face to face with Mohit, was facing South.

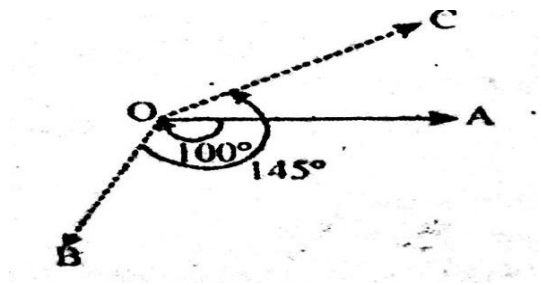
28. (a) The movements of Rohit are as shown in figure. Rohit's distance from starting point
A = AE = (AD + DE) = (BC + DE) = (20 + 15) m = 35 m.
Also, E is to the East of A.



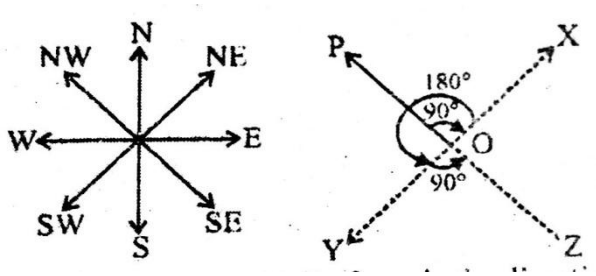
29. (a) In morning, sun rise in the east so shadow of a object falls towards the west. Now, Kavita's shadow falls to the rights of Reeta. Hence, Reeta is facing South and Kavita is facing North.



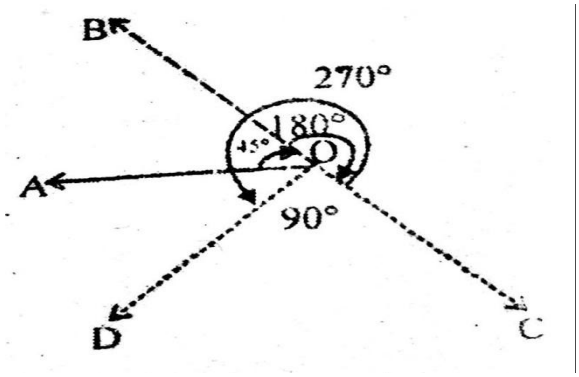
30. (b) As shown in figure, the man initially faces towards east i.e., in the direction OA. On moving 100° clockwise, he faces in the direction OB. On further moving 145° anti-clockwise, he faces the direction OC. Clearly, OC makes an angle of (145° -100°) i.e. 45° with OA and so, the man faces in the direction North-east.



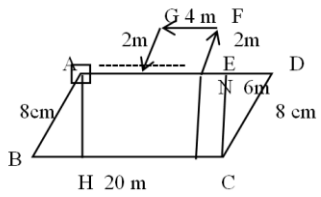
31. (d) As shown in figure, the man initially faces in the direction OP. On moving 90° clockwise, lie faces in the direction OX. On farther moving 1801 anticlockwise, he faces in the direction OY. Finally, on moving 90° anticlockwise, he faces in the direction OZ, which is South-east.

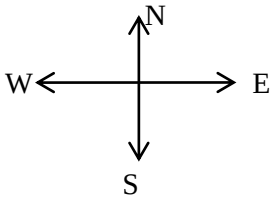


32. (d) Clearly, the man initially faces in the direction OA. On moving 45° clockwise, he faces in the direction OB. On further moving 180° clockwise, he faces in the direction OC. Finally, on moving 270° anticlockwise, he faces in the direction OD, which is South-west. Hence, the answer is (d)



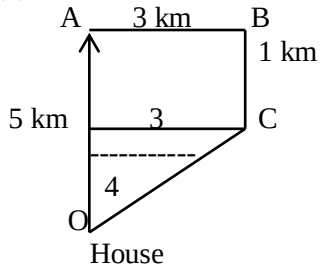
33. (b)

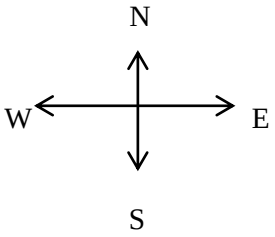




AO = 20 – (4 + 6) = 10m

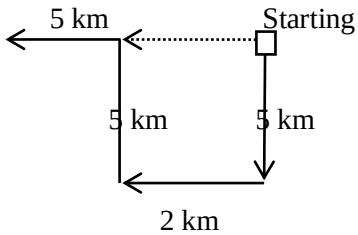
34. (d)

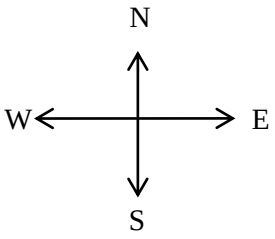




OC = $\sqrt{4^2 + 3^2} = \sqrt{16 + 9} = \sqrt{25}$ = 5km

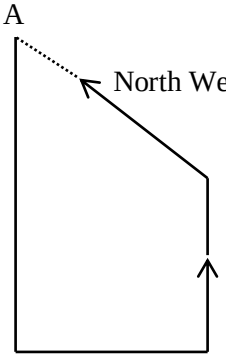
35. (b)





Required distance = 5 +2 = 7km

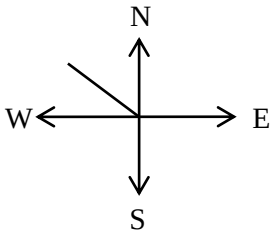
36. (d) Kiran's House



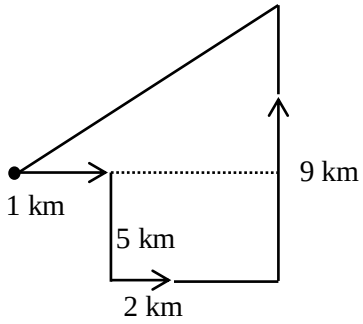
60m

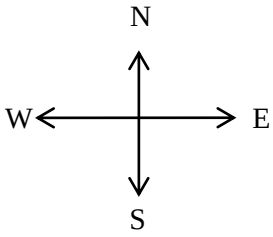
40 m

B 20 m C



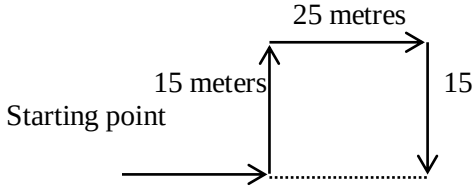
37. (d)





Required distance = $\sqrt{4^2 + 3^2}$ = 5 km.

38. (d)

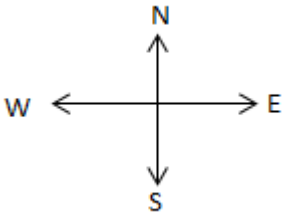


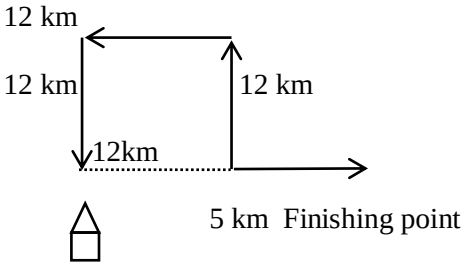
• 20 meters

E Finishing point

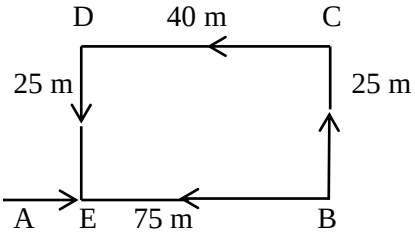
towards South is same, i.e., 15 metres. So, Shobha is 20+25 metres = 45 metres away from her starting point.

39. (c) (12 km + 5 km = 17 km)





40. (d) The movements of Deepak are as shown in fig.



Clearly, FB = DC = 40 cm.

∴ Deepak's distance from the starting point A = (AB – EB) = (75 – 40) m = 35.

41. (b) The directions to be followed will be:

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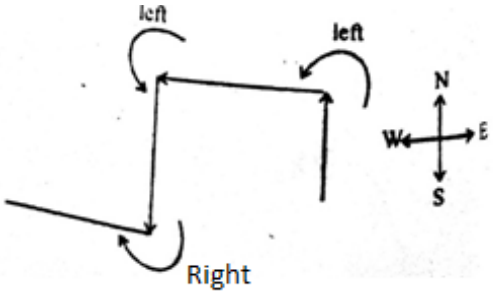
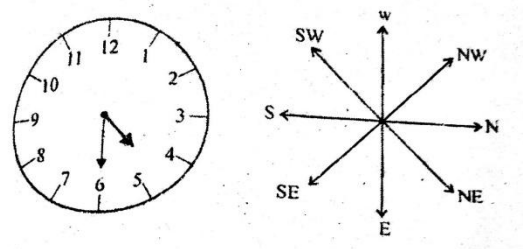
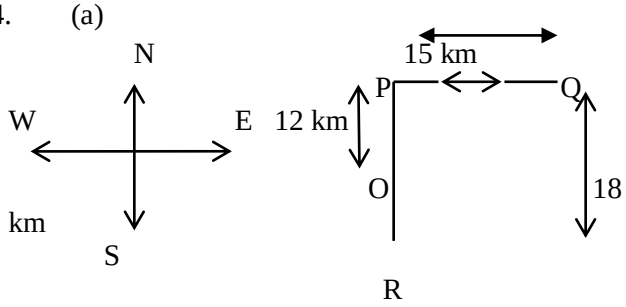


42. (d) Clearly, to show 4.30, the position of the minute and hour hands clock will be as shown. So, again as shown, if the minute hand points East, the hour hand will point in the North-east.



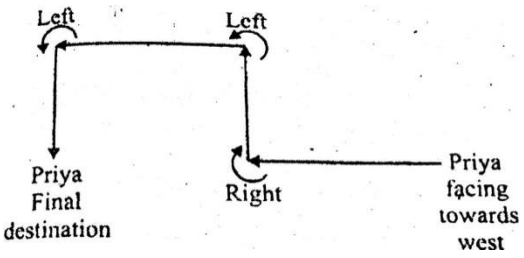
43. (c)

44. (a)



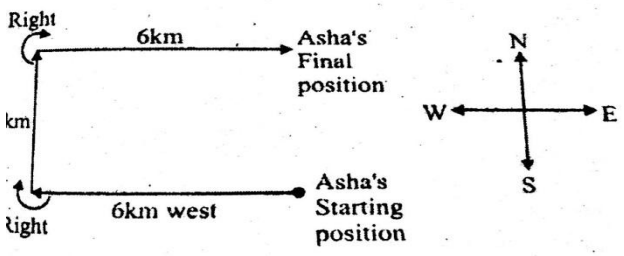
Let O be the starting point and P, Q and R the positions after every movement. Hence, Distance from the starting point =Distance of final position R from O = OR= 18-12 =6 km.

45. (d)



Hence, Priya is moving in the South direction.

46. (c)



Hence, Asha is 3km from starting point and in the cost direction.

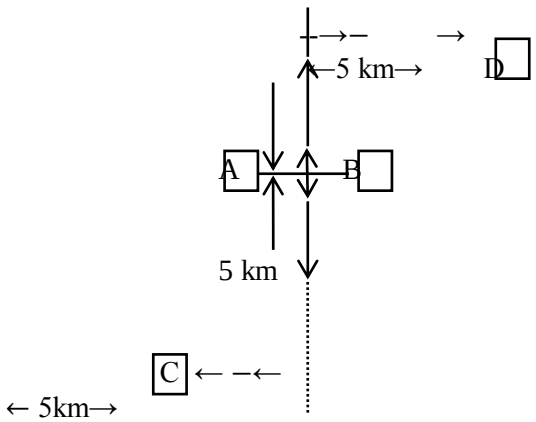
47. (a) Clearly, PQ = $\sqrt{OP^2 + OQ^2}$

$= \sqrt{(300)^2 + (400)^2}$

$= \sqrt{90000 + 160000}$ = 500 km

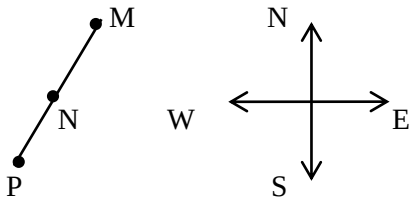
Since, R is the midpoint of PQ, so QR = $\frac{1}{2}$ × PQ = 250 km

48. (c) Given information diagrammatically can be shown as follows:



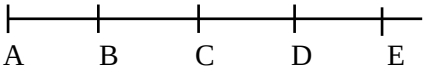
From the above diagram, it is clear that the houses of C and D are less than 20 km apart.

49. (d)



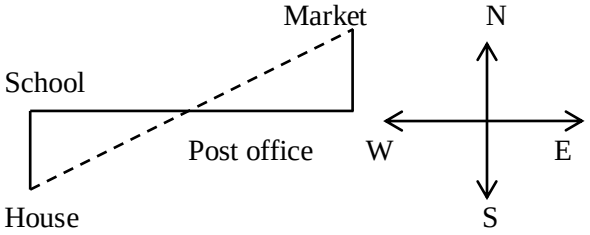
N is between M and P. Hence only (ii) statement is correct.

50. (b) The position of all the five persons is as follows:



Hence AB is smaller than BE

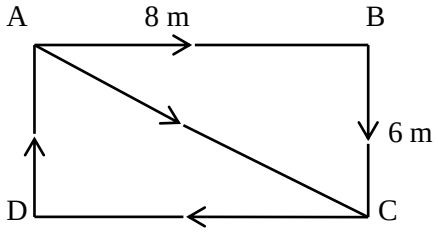
51. (c) The positions of school, house, post office and market are as follows:



Hence the market is in the North-east of my house.

52. (c)

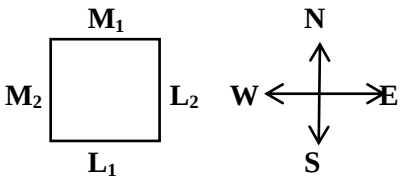
53. (c)



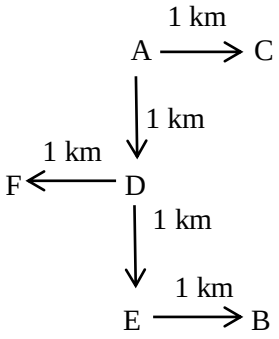
Required distance = $8 + 6 + 8 + 6 + \sqrt{8^2 + 6^2}$

$= 28 + \sqrt{100} = 28 + 10 = 38$ m

54. (c) The positions of the lathes and the men are shown in the diagram given below

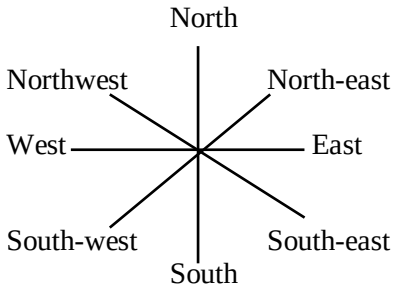


55. (b)

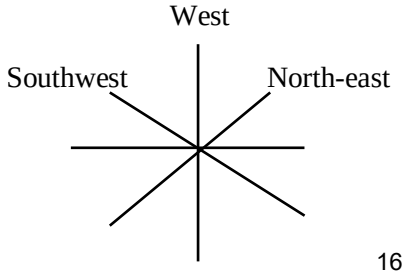


Hence, A, D, E in a line.

56. (a) Original directions



Changed directions

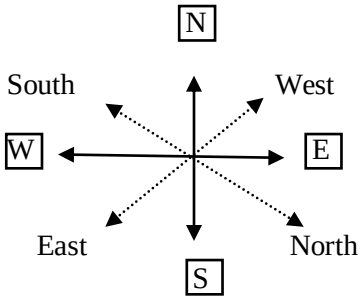


South North

South-west North-east

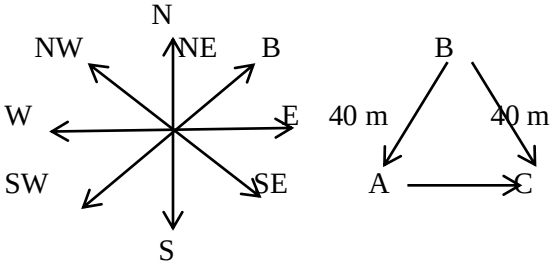
East

57. (b)



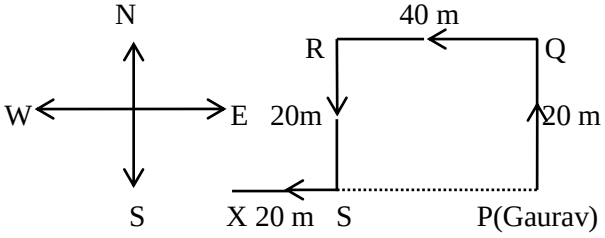
From the figure, it is clear that 'S' becomes 'North-east' in the new figure (dotted line)

58. (a) As clear from the adjoining diagram, C lies to the east of A.

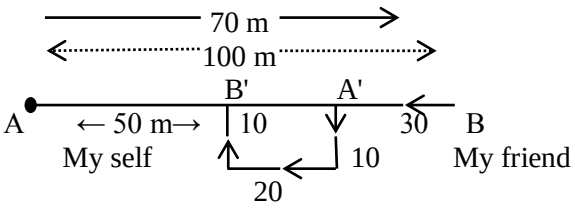


59. (b) The movements for Gaurav are as shown in figure.

Clearly, Gaurav's distance from his initial position P = PX= (PS + SX)=(QR + SX) = (40 + 20) m = 60 m.



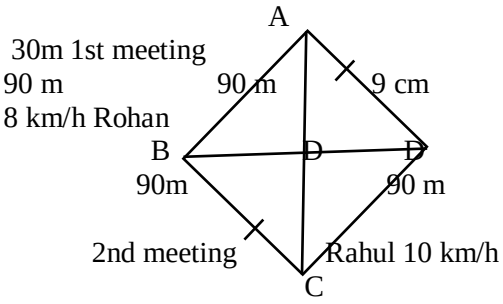
60. (a)



When my friend reaches on the previous track (i.e. on B′) again, he had travelled a distance of (30 +10+2 + 10) = 70 m. As I walk with the same speed as that of my friend I have walked 70m, but on the straight track. Now, he is just [100 - (30 +20)] = 50m from my starting point.

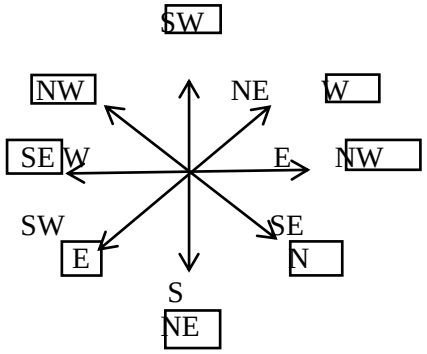
Hence, the distance between us = (70 - 50) = 20m

61. (d)

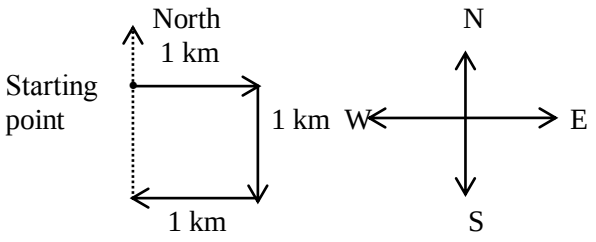


Speeds of Rohan and Rahul are in the ratio 4:5.

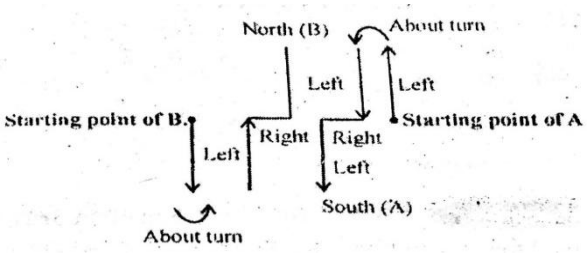
62. (c) If South East becomes North then south west east as shown in direction chart.



63. (a)

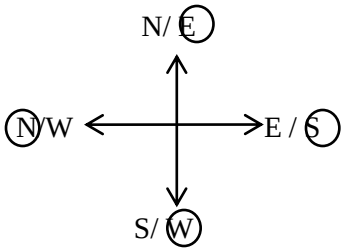


64. (d)



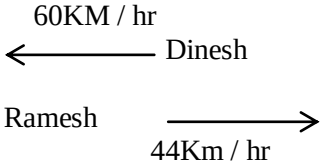
About turn – turning in reverse direction

65. (d)



As East started showing south then west was actually north.

66. (c)



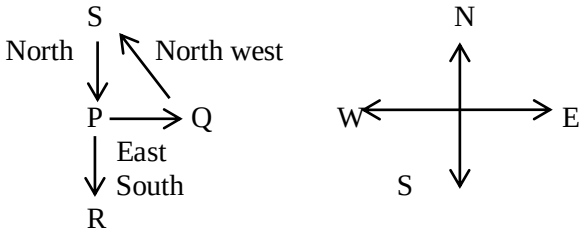
Relative speed of Dinesh and Ramesh's motorcycles = (60+44) = 104 km/hr

Distance travelled by them = Relative speed × Time distance = 104 km /hr × $\left(\frac{15}{60}\right)$hr

$= \frac{104\times15}{60}$ = 26km

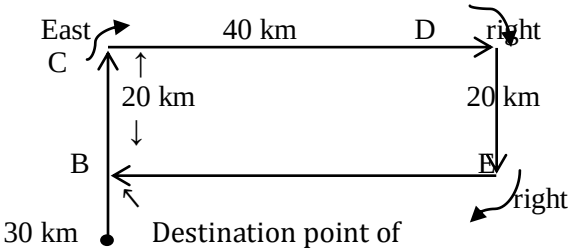
67. (b)

68. (c)



Hence, Q is in North west dissection of S.

69. (b)



Starting point of cyclist

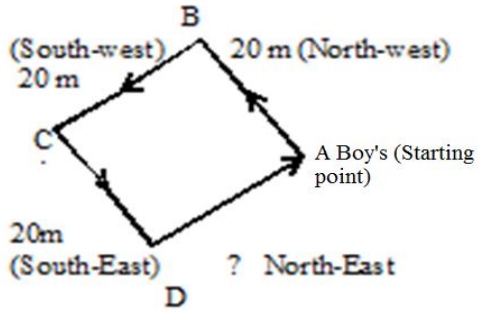
Distance from starting point = AC – BC = 30 – 20 = 10 km

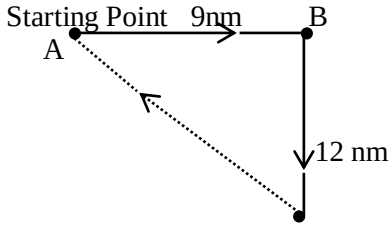
70. (b)

71. (b) A person observes his shadow to his right. The sun is to his left. He is walking towards the south.

72. (d) Starting point

DIRECTION & DISTANCE Questions, Answers & Explanation





Ending point

C

The shortest distance

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

$= \sqrt{9^2 + 12^2}$

$= \sqrt{225}$ = 15 nautical miles.