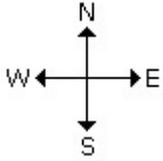
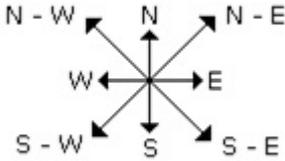


Direction and Senses

There are four main directions - East, West, North and South as shown below:



There are four cardinal directions - North-East (N-E), North-West (N-W), South-East (S-E), and South-West (S-W) as shown below:



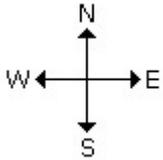
1. At the time of sunrise if a man stands facing the east, his shadow will be towards west.
2. At the time of sunset the shadow of an object is always in the east.
3. If a man stands facing the North, at the time of sunrise his shadow will be towards his left and at the time of sunset it will be towards his right.
4. At 12:00 noon, the rays of the sun are vertically downward hence there will be no shadow.

In these questions, we will see persons or things moving in E, W, N, S directions from an initial point. We have to plot the diagram for their movements and give the appropriate

Solutions to the given questions.

Tips 2 solve:

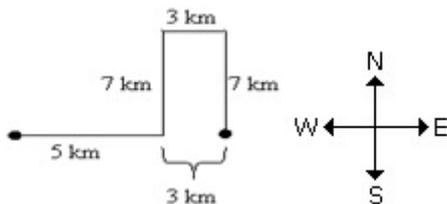
- 1) Plot the diagram of traverse path with respect to the 4 directions E, W, N and S in a diagrammatic presentation



- 2) Find the distance from one node to another place, if necessary.
- 3) Now solve the question by carefully observing the diagrammatic presentation.

Example: 1) A man walks 5 km east and turns left, then he walks 7 km and turns right and walks 3 km, then turns right and walks 7 km. Find the shortest distance he traveled and find the direction he is now from the starting point?

Solution: Diagrammatic representation of the given data:



The shortest distance, he is from the starting point = $5 \text{ km} + 3 \text{ km} = 8 \text{ km}$.

The direction he is from the starting point = East.

- 2) A car travels 2.5 km towards south, then turns left and travels 7.5 km and then turns left and travels 15 km and then turns left and travels 7.5 km. Then find the distance and direction of the with respect to the starting

point?

Solution: Diagram: prob1

The final position of the car in north direction with respect to the starting point.

The distance from the starting point, from the diagram = $15 \text{ km} - 2.5 \text{ km} = 12.5 \text{ km}$

Exercices:

1. After walking 6 kms, I turned right and travelled a distance of 2 kms, then turned left and covered a distance of 10 km. In the end I was moving towards the north. From which direction did I start my journey?

a. North b. South c. South-West d. North-East

2. Raju who is facing east, turns 100° in the anti-clock-wise direction and then 145° in the clock-wise direction. Which direction is he facing now?

a. South-East b. South c. North-West d. West

3. From her school Meenu walks 20 metres towards north. She, then turns left and walks 40 metres. She again turns left and walks 20 metres. Further she moves 20 metres after turning to the right. How far is she from her original position?

a. 20m b. 30m c. 50m d. 60m

4. A watch shows 4.30. If the minute hand points to east, in what direction will the hour hand point?

A. North-West b. South-East c. North-East d. North

5. On an election day Santhosh walked from a place, 10 km towards South to reach the polling station, then turned left upto 2 km, then took a right turn, and took another 4 kms walk. Again he turned right and walked for 12 kms and took a 14 km walk by turning to North, and there he could see the polling station at a 12 km distance after taking a right turn. In which direction is the polling station situated?

a. North b. East c. South d. West

6. One evening, two friends Riya and Priya were talking to each other, with their backs towards each other, sitting in a park. If Riya's shadow was exactly to the left of her, then which direction was Priya facing?

a. North-East
b. north
c. East
d. South

7. Two buses start from the opposite points of a main road, 150kms apart. The first bus runs for 25kms and takes a right turn and then runs for 15 kms. It then turns left and runs for another 25 kms and takes the direction back to reach the mai road. In the meantime, due to a minor breakdown, the other bus has run only 35 kms along the main road. What would be the distance between the two buses at this point?

A. 65kms b. 75kms c. 80 kms d. 85kms

8. Fifteen boys are standing in a row facing opposite direction alternately from left to right. If the fourth boy from left is facing towards the east then the fifth boy from the right is facing which direction?

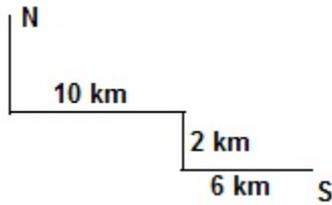
a. South b. North-west c. East d. None of these

9. Vishwanath was walking on the road early morning after the sunrise and his shadow was failing to his left. Which direction was he facing?

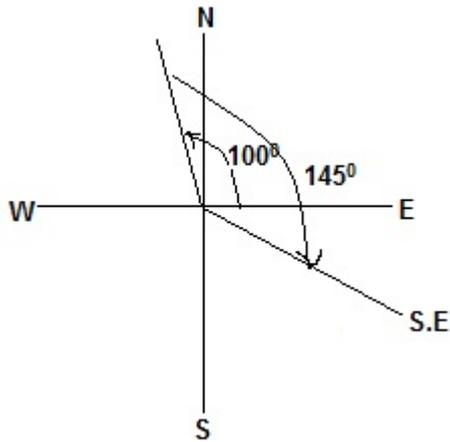
a. East b. North c. West d. Either East or West

Answer & Explanations

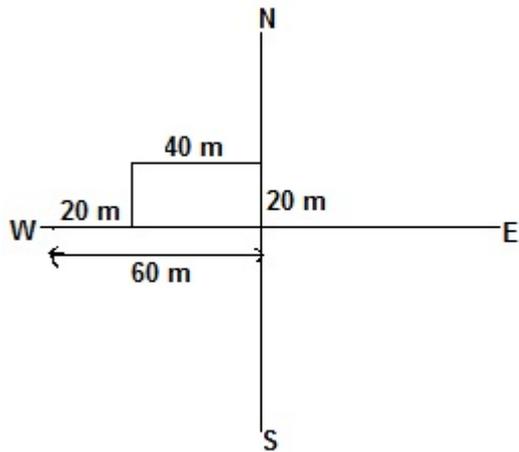
1. Ans: (b).



2. Ans: (a).

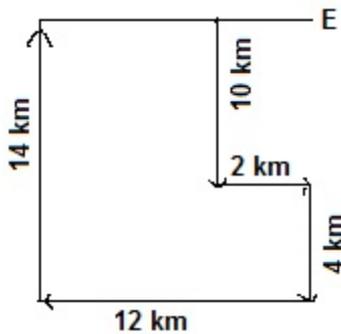


3. Ans: (d)



4. Ans: (c)

5. Ans: (b)



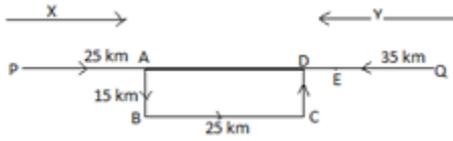
6. Expl: Riya's shadow fell to her left i.e. towards East (as it was evening). So, Riya was facing South. As Priya had her back towards Riya, hence, Priya was facing North.

Choice (2).

7. Ans: a.

Let X and Y be two buses.

Bus X travels along the path PA, AB, BC, CD.



Now, $AD = BC = 25 \text{ km}$.

So, $PD = PA + AD = 50 \text{ km}$.

Bus Y travels 35 km upto E.

Therefore, distance between two buses = $PQ - (PD + QE) = (150 - (50 + 35)) = 65 \text{ km}$.

8. Ans: e

Fifth boy from right means

$(15 - 5) + 1 = 11^{\text{th}}$ boy from left.

According to question

4th boy from the left is facing towards the east. It implies that the boys standing at even positions from left are facing towards east and those standing at odd positions are facing towards west. Therefore, fifth boy from the right (11th boy from left) would face towards west.

9. Ans: b.

In the morning hour the shadow of any object is formed towards west.

According to question, to the left of Vishwanath is the west. Therefore, he was facing towards north.