



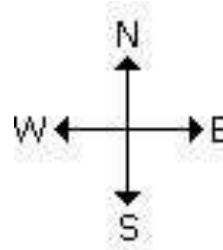
Explore | Expand | Enrich

DIRECTION SENSE

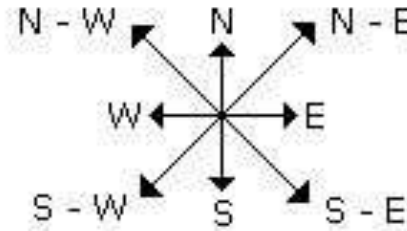


Concept

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:



Four Important Points:

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.

Main types of questions are given below:

Type 1:

Siva starting from his house, goes 5 km in the East, then he turns to his left and goes 4 km. Finally he turns to his left and goes 5 km. Now in what direction is he from his house?

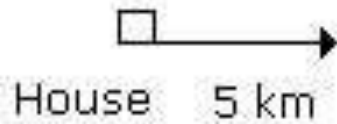
Solution:

From the below diagram,

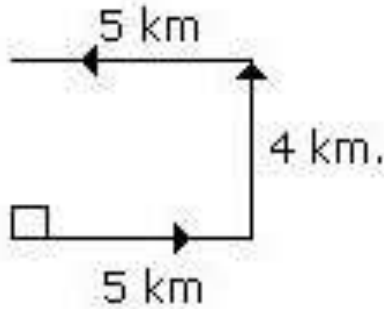
From third position it is clear he is in North direction.



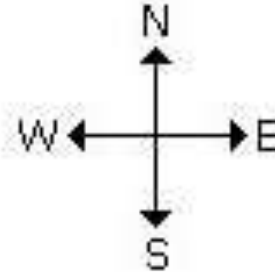
Concept



I



III

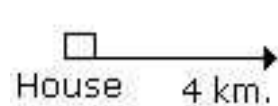


Type 2:

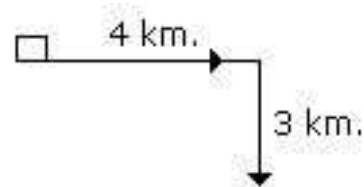
Suresh starting from his house, goes 4 km in the East, then he turns to his right and goes 3 km. What is the distance from the starting point?

Concept

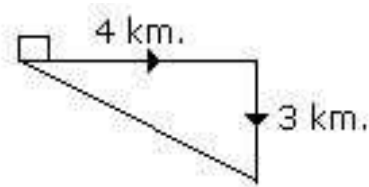
Solution:



I



II



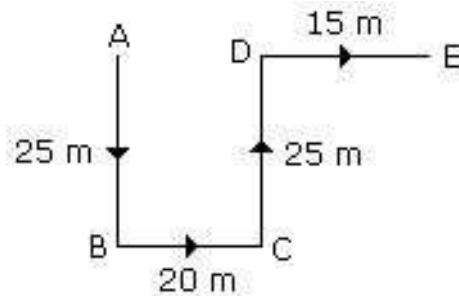
III

$$\begin{aligned}\text{Minimum distance} &= \sqrt{(4)^2 + (3)^2} \\ &= \sqrt{16 + 9} \\ &= \sqrt{25} \\ &= 5 \text{ km.}\end{aligned}$$

Type 3:

Rohit walked 25 m towards south. Then he turned to his left and walked 20 m. He then turned to his left and walked 25 m. He again turned to his right and walked 15 m. At what distance is he from the starting point and in which direction?

Solution:



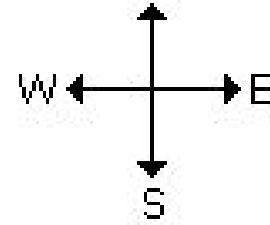
$$\begin{aligned}\text{Required distance} &= AE \\ &= 20 + 15 \\ &= 35 \text{ m towards east.}\end{aligned}$$

Type 4:

One morning after sunrise Juhi while going to school met Lalli at Boring road crossing. Lalli's shadow was exactly to the right of Juhi. If they were face to face, which direction was Juhi facing?

Solution: In the morning sunrises in the east.

So in morning the shadow falls towards the west.



Now Lalli's shadow falls to the right of the Juhi. Hence Juhi is facing South.

Question: 01

One morning after sunrise, Suresh was standing facing a pole. The shadow of the pole fell exactly to his right. To which direction was he facing?

- A] North
- B] West
- C] South
- D] East



Explanation:

Sun rises in the east in the morning. Since the shadow of Suresh falls to his right. So he is facing South. So, option C is correct.



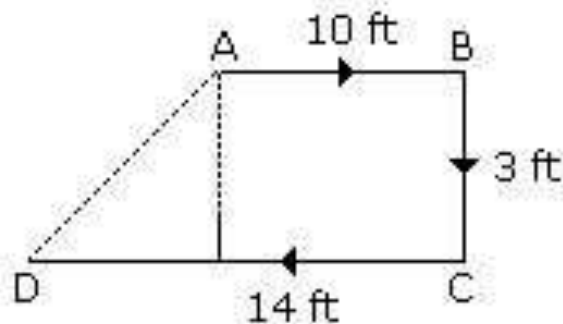
Question: 02

Reena walked from A to B in the East 10 feet. Then she turned to the right and walked 3 feet. Again she turned to the right and walked 14 feet. How far is she from A?

- A. 4 feet
- B. 5 feet
- C. 24 feet
- D. 27 feet



Explanation:



Required distance = AD

$$= \sqrt{3^2 + (14 - 10)^2}$$

$$= \sqrt{9 + 16}$$

$$= 5 \text{ ft}$$

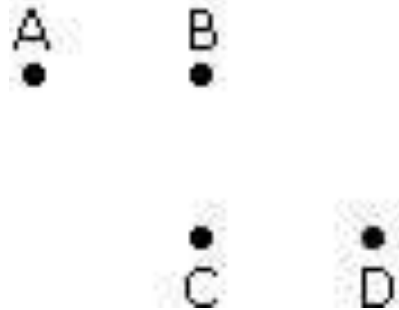
Question: 03

Four friends A, B, C and D live in a same locality. The house of B is in the east of A's house but in the north of C's house. The house of C is in the west of D's house. D's house is in which direction of A's house?

- A] South-East
- B] North-West
- C] North-East
- D] East



Explanation:



Therefore, D's house is in the South-East direction of A.

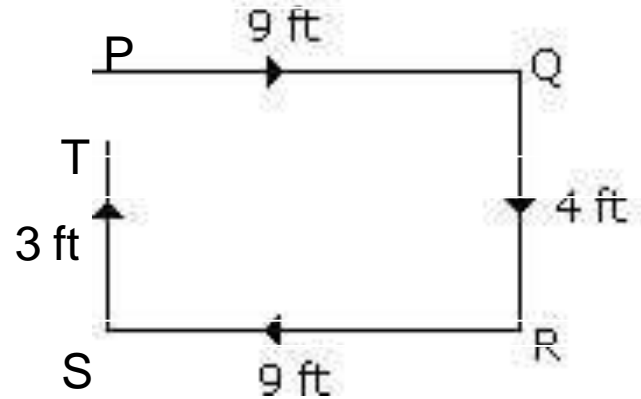
Question: 04

Umesh directly went from P, to Q which is 9 feet distant. Then he turns to the right and walked 4 feet. After this he turned to the right and walked a distance which is equal from P to Q. Finally he turned to the right and walked 3 feet. How far is he now from P?

- A. 6 feet
- B. 5 feet
- C. 1 feet
- D. 0 feet



Explanation:



$$\begin{aligned}\text{Required distance} &= PT \\ &= 4 - 3 \\ &= 1 \text{ ft.}\end{aligned}$$

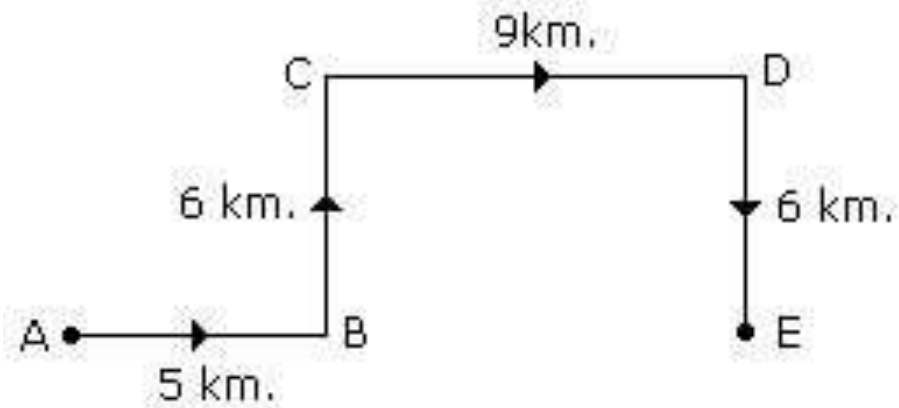
Question: 05

Shyam walks 5 km towards East and then turns left and walks 6 km. Again he turns right and walks 9 km. Finally he turns to his right and walks 6 km. How far is he from the starting point?

- A. 26 km
- B. 21 km
- C. 14 km
- D. 9 km



Explanation:



$$\begin{aligned}\text{Required distance} &= AE \\ &= 5 + 9 \\ &= 14 \text{ km.}\end{aligned}$$

Question: 06

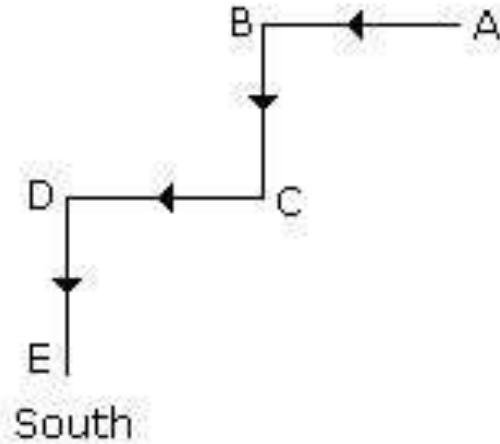
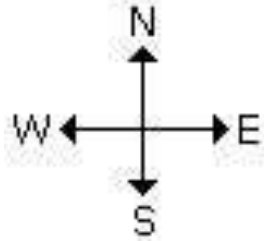
Amit started walking positioning his back towards the sun. After some time, he turned left, then turned right and towards the left again. In which direction is he going now?

- A] North or South
- B] East or West
- C] North or West
- D] South or West

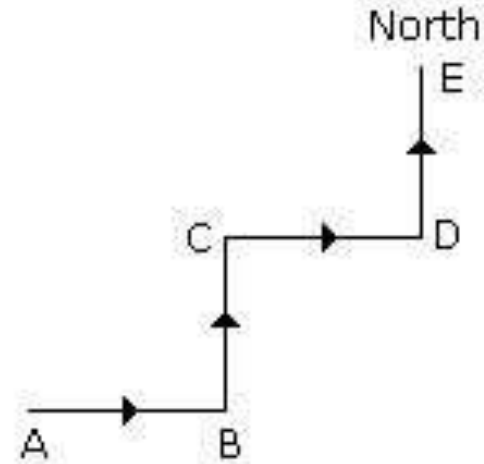


Explanation:

In the morning



In the evening



If he starts walking the morning then finally he will face towards South and if he starts in the evening then finally he will face towards North.

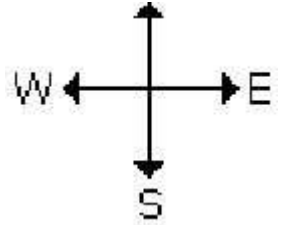
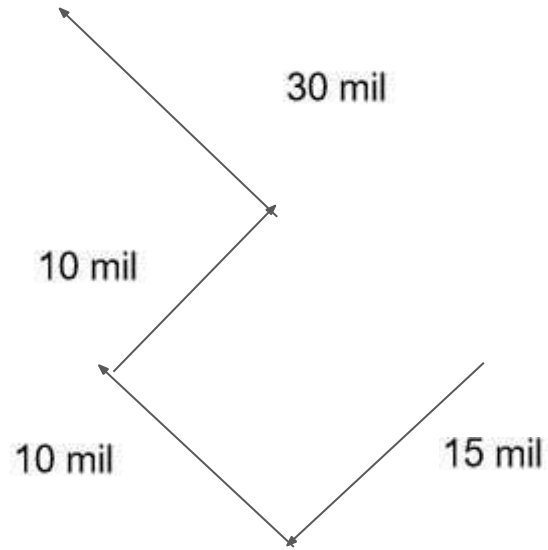
Question: 07

Mary is walking towards south-west for 15 miles, turns right and walks another 10 miles. She then turns 90 degrees clockwise and walks 10 miles. Now, she again turns left and walks 30 miles. Which direction is she facing?

- A] North-West
- B] South-East
- C] East
- D] West



Explanation:



She is facing north west direction.

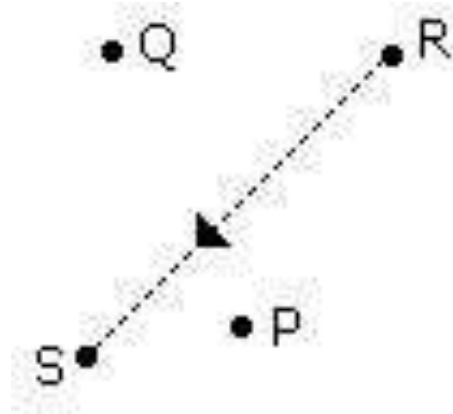
Question: 08

Village Q is to the North of the village P. The village R is in the East of Village Q. The village S is to the left of the village P. In which direction is the village S with respect to village R?

- A. West
- B. South-West
- C] South
- D] North-West



Explanation:



S is to the South-West of R.

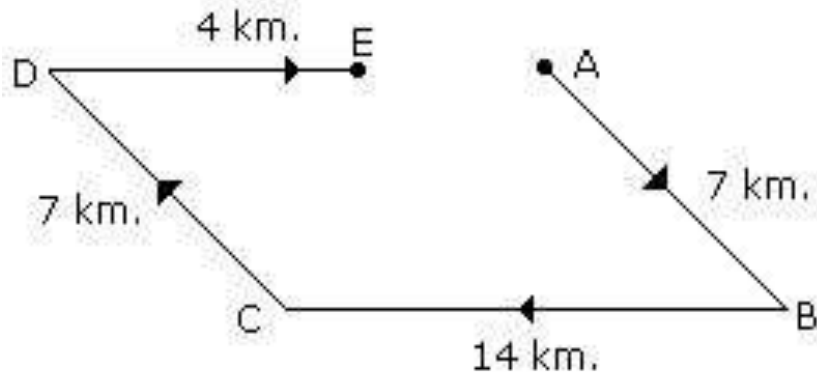
Question: 09

Radha moves towards South-East a distance of 7 km, then she moves towards West and travels a distance of 14 km. From here she moves towards North-West a distance of 7 km and finally she moves a distance of 4 km towards east. How far is she now from the starting point and in which direction?

- A] 3 km- East
- B] 4 km- West
- C] 10 km- East
- D] 11 km- West



Explanation:



$$\begin{aligned}\text{Required distance} &= AE \\ &= 14 - 4 \\ &= 10 \text{ km.}\end{aligned}$$

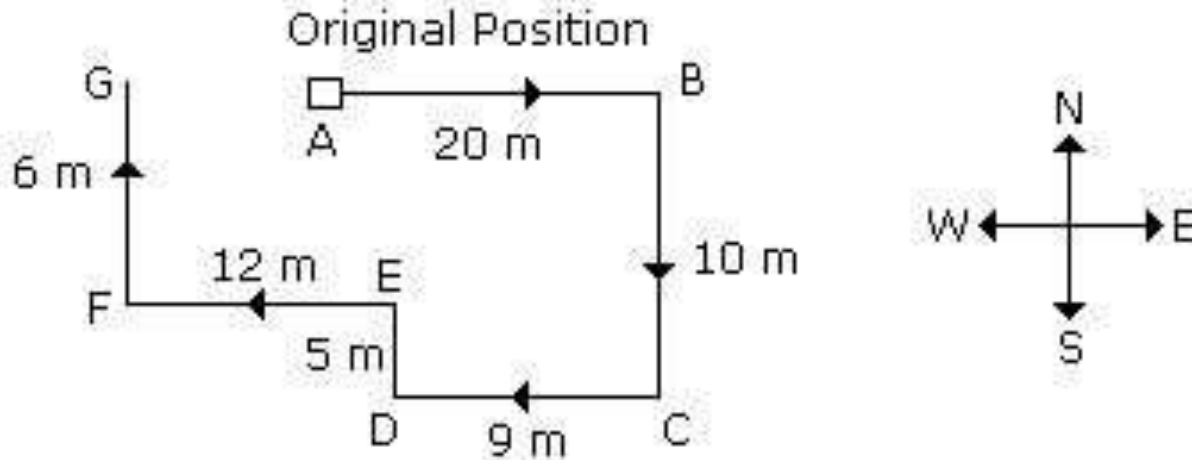
Question: 10

Sundar runs 20 m towards East and turns to right and runs 10 m. Then he turns to the right and runs 9 m. Again he turns to right and runs 5 m. After this he turns to left and runs 12 m and finally he turns to right and 6 m. Now to which direction is Sundar facing?

- A] 1 m- East
- B] 1 m- West
- C] 1 m- North
- D] 1 m- South



Explanation:



Therefore, it is clear that Sundar will face towards North.

$$\begin{aligned}\text{Distance from starting point} &= (9+12) - 20 \\ &= 21 - 20 = 1 \text{ m}\end{aligned}$$

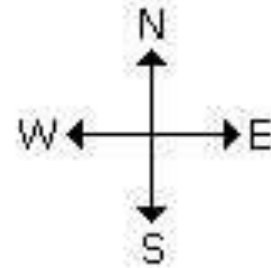
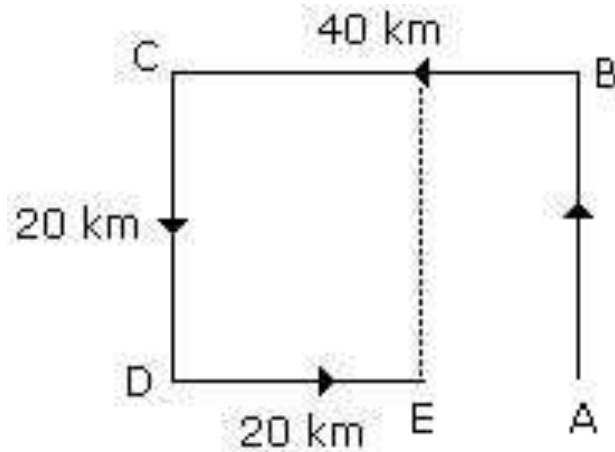
Question: 11

Sachin walks 20 km towards North. He turns 90 degree left and walks 40 km. He again turns 90 degree left and walks 20 km. Finally he moves 20 km after turning to the left. How far is he from his starting position?

- A. 20 km.
- B. 30 km.
- C. 50 km.
- D. 60 km.

Answer: A

Explanation:



Required distance = $40 - 20 = 20$ km.

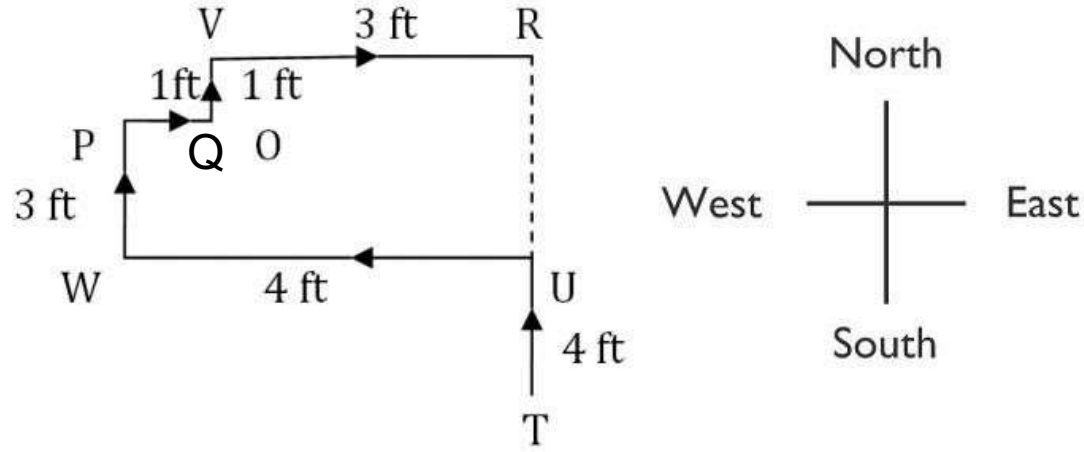
Question: 12

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

- A. 4 ft.
- B. 5 ft
- C. 7 ft.
- D. 8 ft.

Answer: D

Explanation:



Distance between T and R = $TR = TU + UR = TU + PW + QV = (4 + 3 + 1) \text{ ft} = 8 \text{ ft}.$

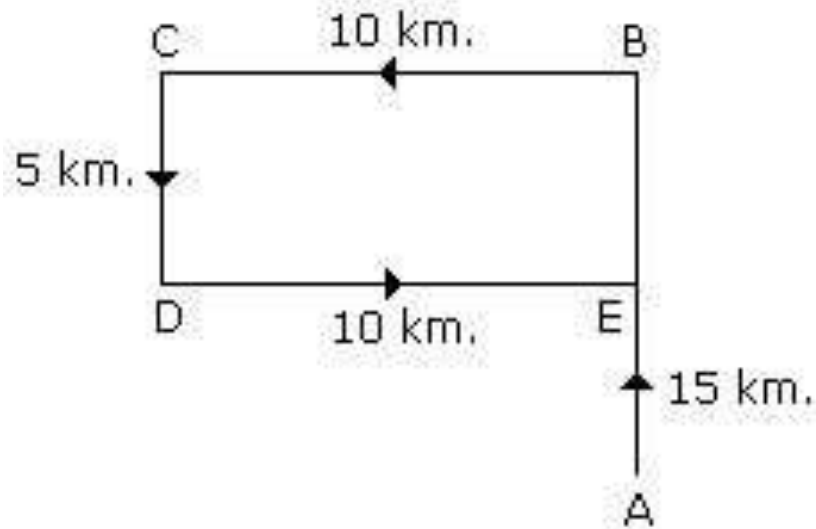
Question: 13

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 the east, he covered 10 km. In which direction is he from his house?

- A] East
- B] West
- C] North
- D] South

Answer: C

Explanation:



Therefore, it is clear that he is in the North from his house.

Question: 14

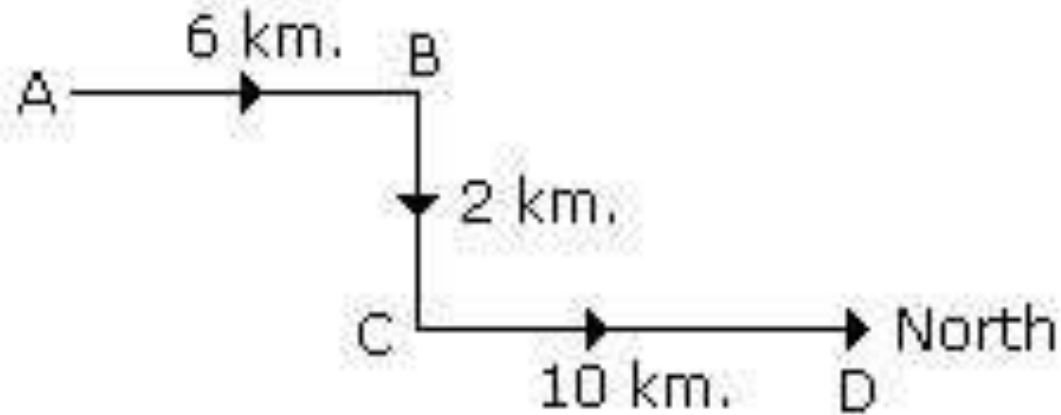
After walking 6 km, I turned 90 degree to the right and then walked 2 km. After then I turned 90 degree to the left and walked 10 km. In the end, I was moving towards the North. From which direction did I start my journey?

- A] North
- B] South
- C] East
- D] West

Answer: B



Explanation:



The journey was started from the South.

Question: 15

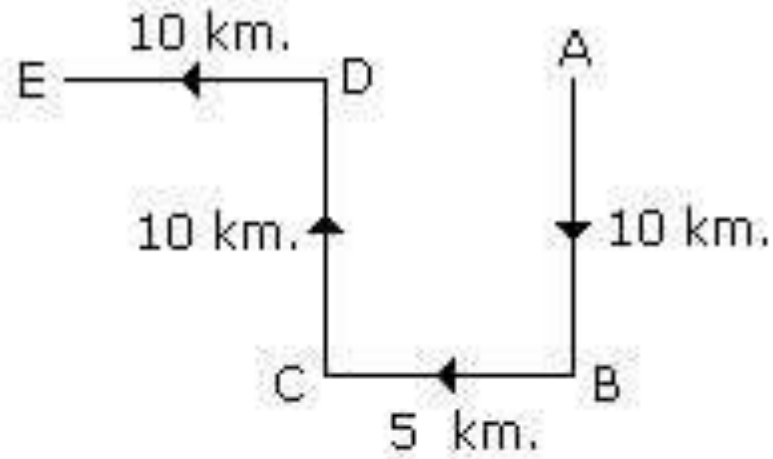
Ravi left home and cycled 10 km towards South, then turned right and cycled 5 km and then again turned right and cycled 10 km. After this he turned left and cycled 10 km. How many kilometers will he have to cycle to reach his home straight?

- A. 10 km
- B. 15 km
- C. 20 km
- D. 25 km

Answer: B



Explanation:



$$\begin{aligned}\text{Required distance} &= AE \\ &= 5 + 10 \\ &= 15 \text{ km.}\end{aligned}$$

THANK YOU

