

## CHAPTER 6

# Direction Sense Test

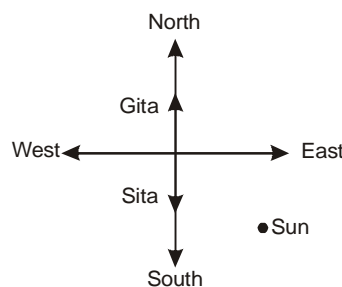
The problems in this chapter deal with the linear distance or displacement or direction between starting point and the final point in  $X - Y$  dimensions.

**Example 1:** One morning after sunrise, Sita and Gita were standing in a chowk in Mumbai with their back towards each other. Sita's shadow fell exactly towards right hand side. Which direction was Gita facing ?

- (a) East
- (c) North

- (b) West
- (d) South

**Solution:** (c)



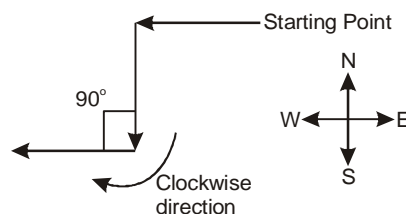
So, the answer is North.

**Example 2:** A girl was going towards west, then she turned left, then turned  $90^\circ$  in clockwise direction. In which direction was she going now ?

- (a) East
- (c) North

- (b) West
- (d) None of these

**Solution:** (b)



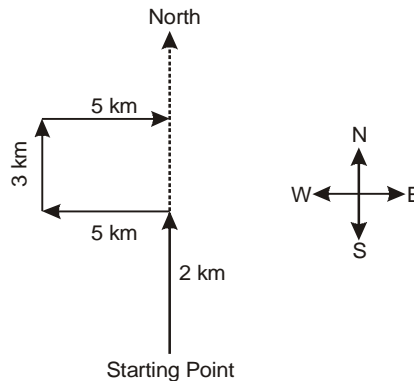
So, the answer is West.

**Example 3:** Amit walks 2 km Northward and takes a left turn, walks 5 km and then turns right, walks 3 km and again turning right, walks 5 km. In which direction is he now from the starting point ?

- (a) East
- (c) West

- (b) North
- (d) South

**Solution:** (b)



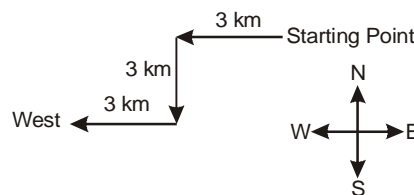
So, answer is North.

**Example 4:** Sachin starts from his house and walks Westward. He then takes a left turn and then a right, before each turn he walks 3 km. In which direction is he walking now ?

- (a) North
- (c) West

- (b) South
- (d) East

**Solution.** (c)



So, answer is west.

**Example 5:** One morning Ram and Shyam were talking to each other sitting opposite to each other. It was observed that Ram's shadow fell to his right. Then, which direction was he facing?

- (a) East
- (c) North

- (b) South
- (d) West

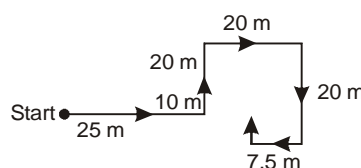
**Solution.** (b) Because Ram's shadow is to his right it means that he is facing the South. So, the answer is (b) South.

**Example 6:** Ragini starts from her house towards East. After walking a distance of 25 m, she turned towards left and walked 10 m. She then turned right and after moving a distance of 20 m, turned to her right again and walked 20 m. She then turns to the right and walks 7.5 m. Finally, she turns to her right. In which direction is she walking now ?

- (a) South-East
- (c) North

- (b) West
- (d) North-West

**Solution.** (c) The movement is like



Hence, she is walking towards North. So, the answer is (c) North.

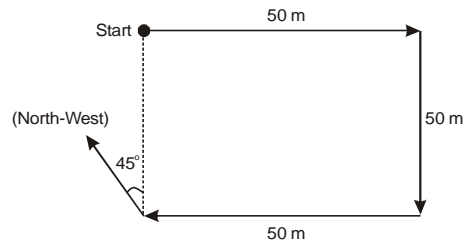
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**Example 7:** Rakhi went 50 m towards the East, then turned right and went 50 m. Rakhi again turned right and went 50 m. She took a  $45^\circ$  turn towards her right and went straight. In which direction is she walking now?

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

**Solution.** (c) The movements are like

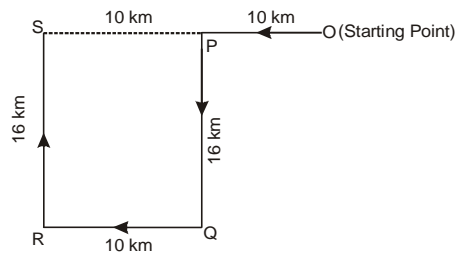


Hence, the answer is (c) North-West.

**Example 8:** Rati goes 10 km West, then turns left and goes 16 km. Then, she turns right and goes 10 km and then she turns right and goes 16 km. At what distance is she from the starting point now ?

- (a) 16 km (b) 12 km  
(c) 14 km (d) 20 km

**Solution.** (d) The movement is



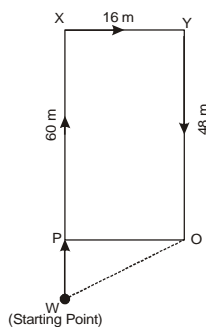
The required distance  $OS$  is  $OP + PS$ , whereas  $PS = QR = 10$  km.

Hence,  $OS = 10$  km +  $10$  km =  $20$  km. The answer is (d)  $20$  km.

**Example 9:** After going 60 m towards North, Tom takes a right turn and goes another 16 m. He then takes a right turn and goes 48 m. How far is he from the starting point ?

- (a) 20 m (b) 12 m  
(c) 16 m (d) 24 m

**Solution.** (a) Tom goes 60 m from  $W$  to  $X$ , then he goes 16 m from  $X$  to  $Y$  and finally 48 m from  $Y$  to  $O$ . To find the distance



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$$WO = \sqrt{WP^2 + PO^2}$$

$$WP = WX - XP = WX - YO$$

$$= 60 - 48 = 12 \text{ m and}$$

$$OP = XY = 16\text{m}$$

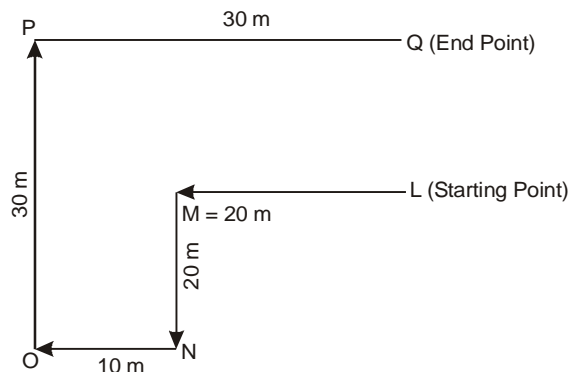
Hence,  $WO = \sqrt{12^2 + 16^2} = 20 \text{ m}$

Hence, the answer is (a) 20 m

**Example 10:** Versha walks 20 m in West and then 20 m to the left. Now every time turning to her right, she walks 10, 30 and 30 m respectively. How far is she now from her starting point ?

- (a) 30 m (b) 10 m  
(c) 40 m (d) 20 m

**Solution.** (b) The movements of Versha are shown in figure and the required distance is QL. Versha's distance from starting point :



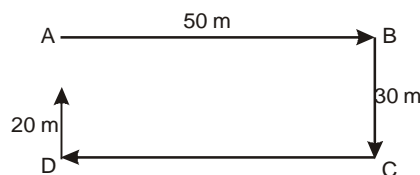
$$QL = OP - MN = (30 - 20)\text{m} = 10 \text{ m}$$

Hence, the answer is (b) 10 m.

**Example 11:** Dhiraj walks 50 m towards East. He then turns right and walks 30 m. He again turns right and walks 50 m. Further, he moves 20 m. after turning to the right. How far is he from his original position ?

- (a) 50 m (b) 30 m  
(c) 20 m (d) 10 m

**Solution.** (d) The movements of Dhiraj are shown in figure and the required distance is AE.



Hence,  $AE = BC - DE$ , ie,  $30 \text{ m} - 20 \text{ m} = 10\text{m}$ .

So, (d) is the answer.

**Example 12:** Aditi travels 10 km towards North. From there, she travels 4 km towards South. Then she travels 2.5 km towards East. How far is she from the starting point ?

- (a) 6.5 km (b) 8.5 km  
(c) 6 km (d) 12.5 km

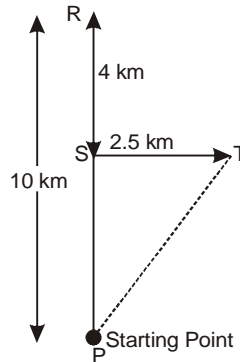
**Solution.** (a) Aditi travels 10 km from P to R, then travels 4 km from R to S and finally 2.5 km from S to T. Therefore, the required distance is  $PT$ .

Hence,

$$PT = \sqrt{SP^2 + ST^2} = \sqrt{6^2 + 2.5^2} = \sqrt{36 + 6.25}$$

$$= \sqrt{42.52} = 6.5 \text{ km}$$

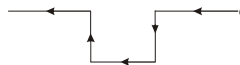
Therefore, 6.5 km (a) is the answer.



**Example 13:** After his office in the afternoon Rakesh goes facing the sun. Then he turns to his left, then turn to his right and then turn to his right and then to his left. In which direction is he moving ?

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

**Solution.** (b) The movement is like

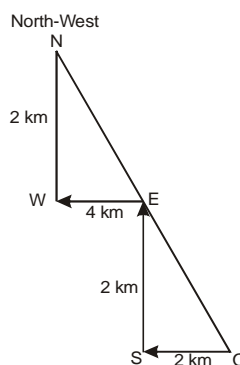


Hence, he is moving in West direction. So, the answer is (b) West.

**Example 14:** The front door of my house faces East. I walk out of my back door and walk 2 km, then turned right and walk another 2 km, then turn left and walk 4 km and turn right again and walk 2 km. In which direction am I facing with respect to starting point?

- (a) South-West (b) North-East  
(c) North-West (d) None of these

**Solution.** (c) The movement is like



Hence, the answer is (c) North-West.

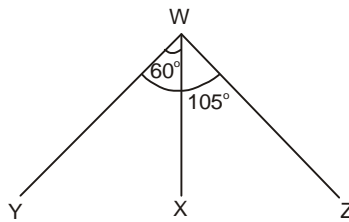
**Example 15:** A girl is facing South. She turns 60° in the clockwise direction and then turns 105° in the anti-clockwise direction. In which direction now she is facing ?

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

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**Solution.** (a)



Clearly, the girl faces in the direction WX. On moving  $60^\circ$  in clockwise direction, she faces in the direction WY. On further moving  $105^\circ$  in anti-clockwise direction, she faces in the direction WZ. Hence, the girl is finally in South-East direction. Hence, answer is (a) South-East.

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