

# DIRECTION AND DISTANCE

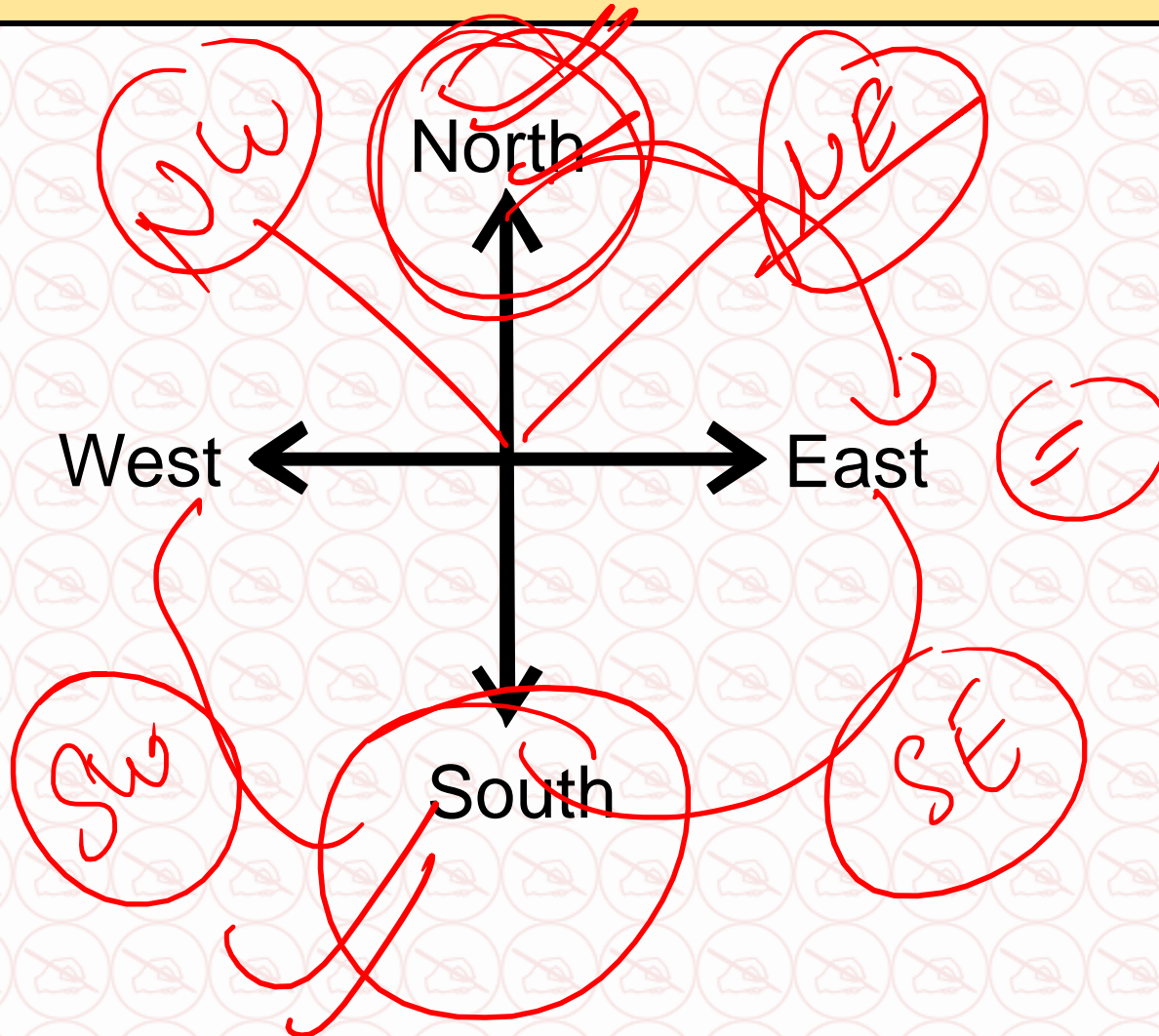


# ABOUT DIRECTIONS

In this chapter, the questions consist of a sort of direction puzzle. A successive follow-up of directions is formulated and we are required to ascertain the final direction and the distance between two points. This test is meant to judge our ability to trace and follow and sense the direction correctly.

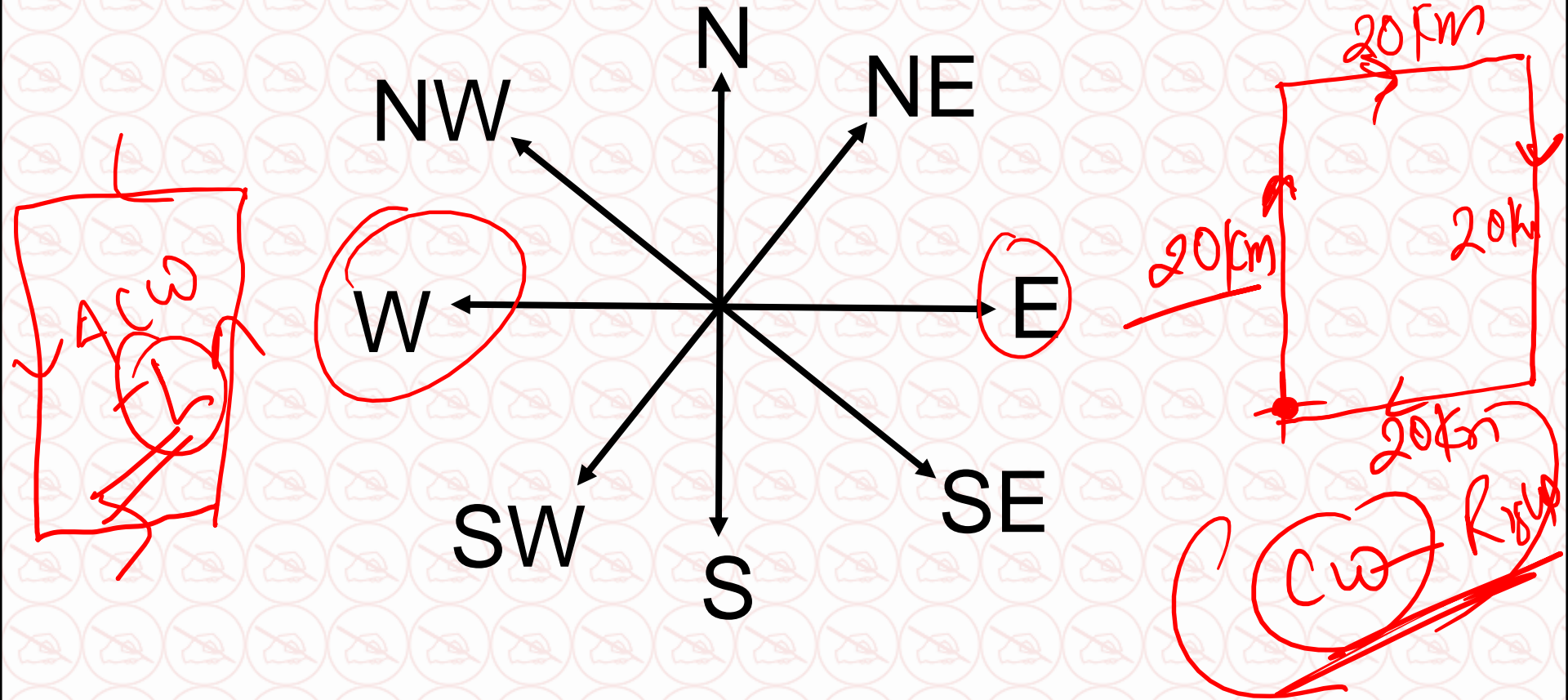


# THERE ARE FOUR MAIN DIRECTIONS

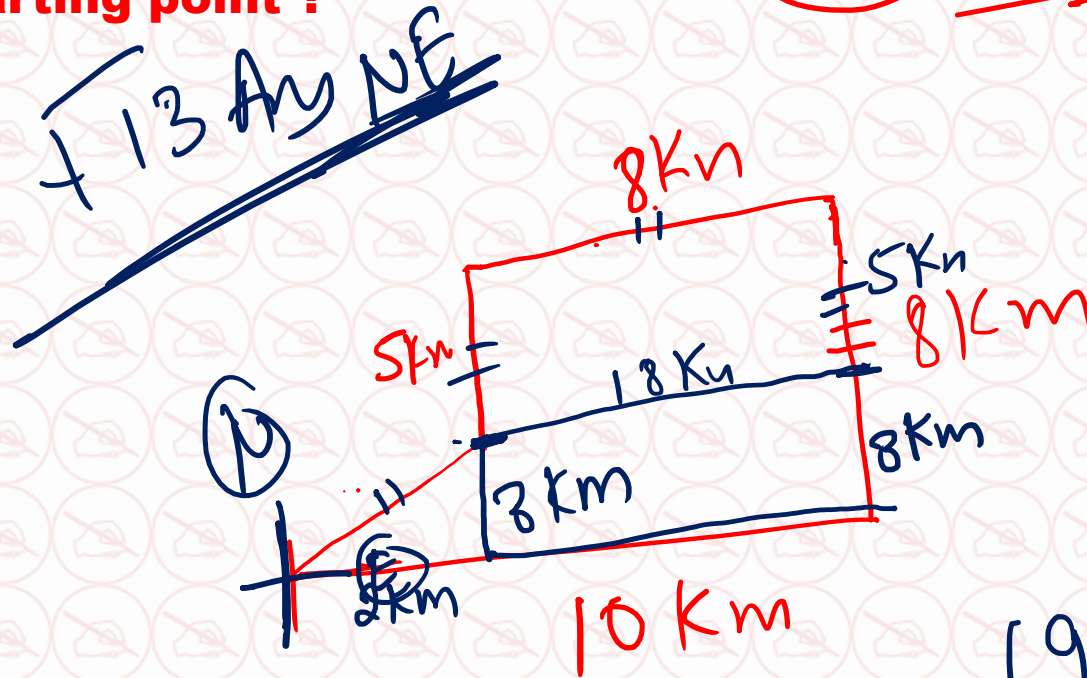


# THERE ARE FOUR SUBORDINATE DIRECTIONS

*Right*



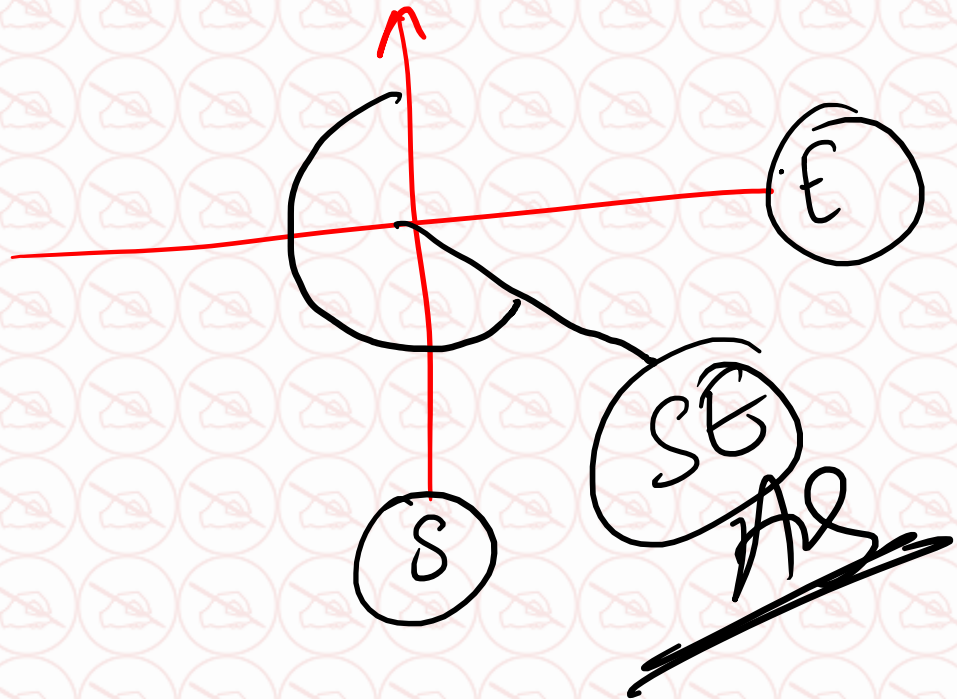
Harish walks 10 km towards east. He turns his left and walks 8 km. Again he turns his left and walks 8 km. At last he turns his left and walks 5 km. How far is he now from his starting point ?



$$\frac{(9) + (2)^2}{\sqrt{9+4}} \\ (\sqrt{13})$$

A man is facing north. He rotates  $180^\circ$  in the clockwise direction and then  $45^\circ$  in the same direction and  $270^\circ$  in the anticlockwise direction. Again he turns  $135^\circ$  clockwise direction and  $180^\circ$  anticlockwise direction. Finally he turn  $135^\circ$  anticlockwise direction. Now in which direction he is facing ?

ACW -  $270^\circ$   
CW -  $45^\circ$   
ACW -  $225^\circ$



**If one morning shobhna walks 10 metres and then turns right and walks 4 meters. Then she turns left and walks 4 metres. If that time her shadow was in her right than in which direction she started walking ?**

# KEY FACTORS

- At the time of sunrise shadow of an object will always be towards west.
- At the time of sunset the shadow of an object will always be towards east.
- If a man stands facing 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.





# KEY FACTORS

- At 12:00 noon, the rays of the sun are vertically downwards hence there will be no shadow.
- Your left object or person is on left and your right object or person is on right.
- Angle will always be made according to the line of sight.



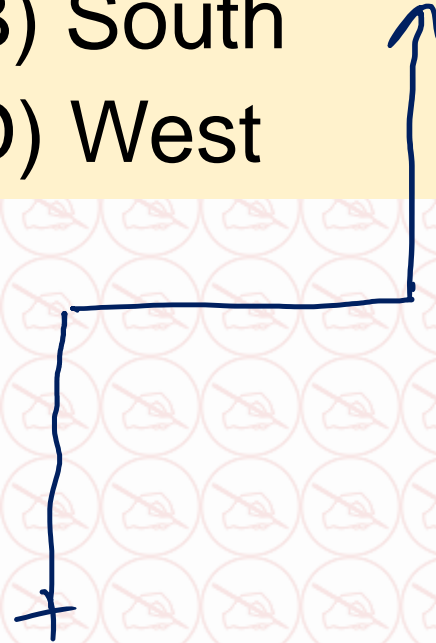
Q.(1) Raju go north, then turn right and then go to the left. In which direction is Raju now ?

~~(A) North~~

(B) South

(C) East

(D) West



# EXPLANATION

Q.(1) ANSWER (A) North

North



The diagram illustrates a coordinate system. A vertical arrow points upwards from a central point, with the label 'North' in a yellow box to its left. A horizontal arrow points to the right from the same central point, with the label 'Right' in a yellow box above it. A second vertical arrow points upwards from the tip of the horizontal arrow, with the label 'Left' in a yellow box to its right. The background of the diagram area is a repeating pattern of a hand writing on a notepad, crossed out with a diagonal line.

Right

Left

Q.(2) Sandeep travels 7 km. towards North, then he turns to his right and walks 3 km. He again turns to his right and moves 7 km forward. Now in which direction is he from his starting point

(A) North

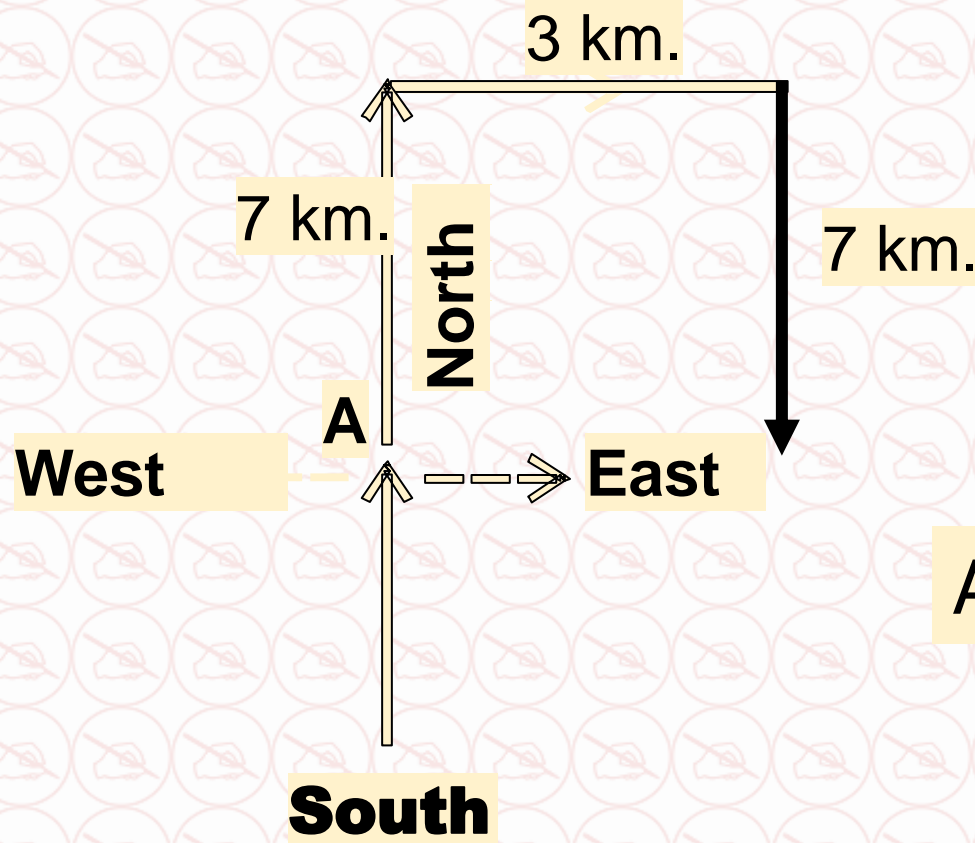
(B) South

(C) East

(D) West

# EXPLANATION

Q.(2) ANSWER (C) East



A = Starting point

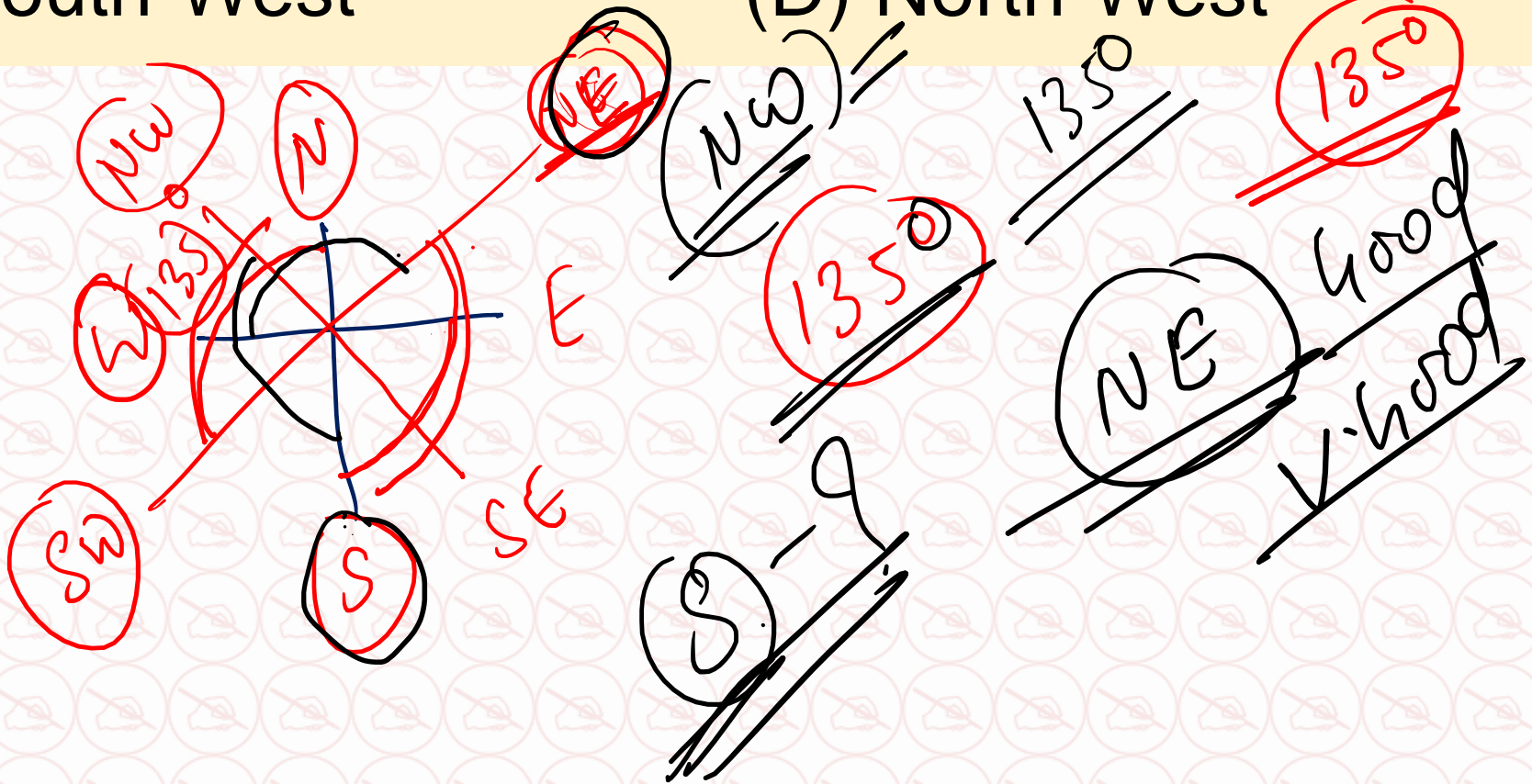
Q.(3) If North-East is called South, South-West is called North, then which direction is denoted by West ?

(A) South-East

(B) North-East

(C) South-West

(D) North-West



# EXPLANATION

Q.(3) ANSWER (A) South - east



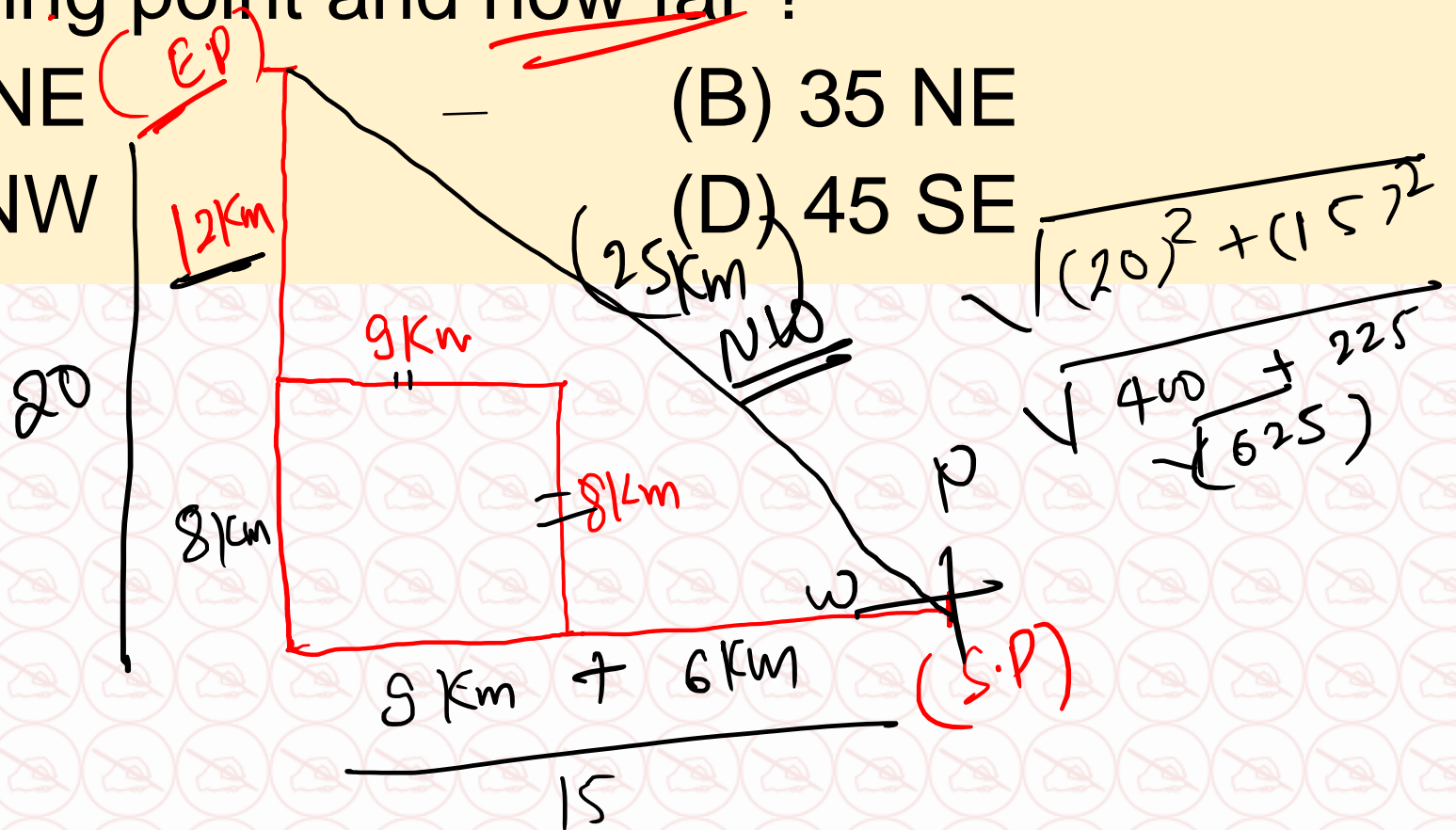
Q.(4) Sonu walks 6 km in the west then he turns to his right and moves 8 km then he turns to his left and moves 9 km then turns to right and moves 12 km. Now in which direction is he from his starting point and how far ?

(A) 15 NE

(B) 35 NE

~~(C) 25 NW~~

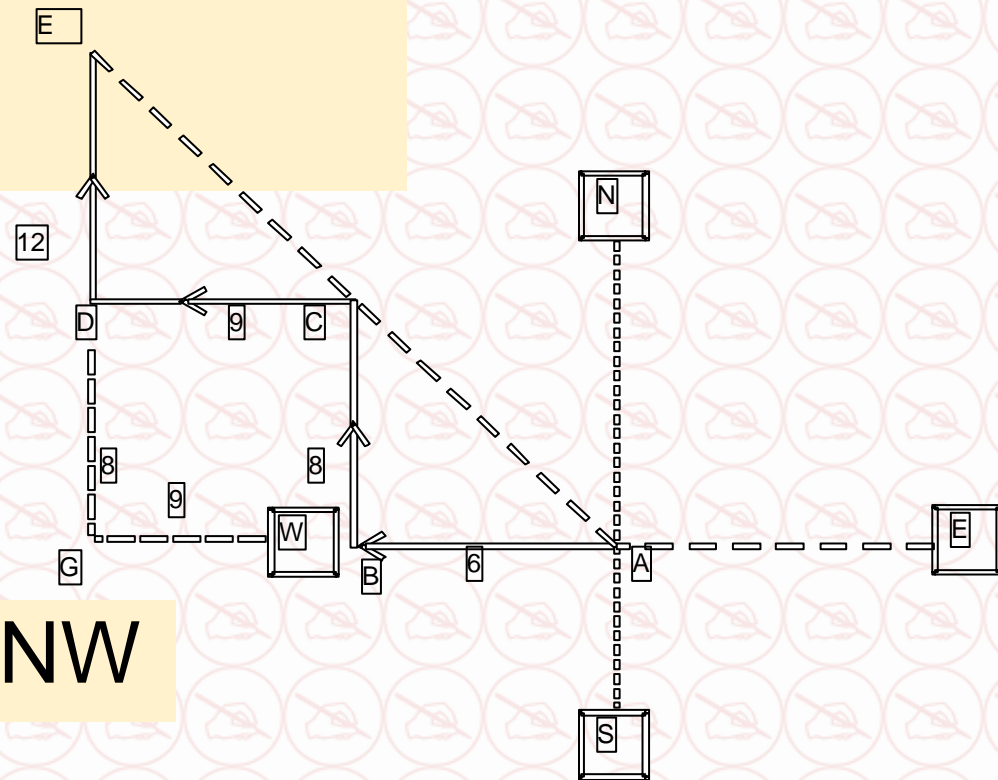
(D) 45 SE





# EXPLANATION

BC = 8 km., DG = 8 km., GB = 9 km.,  
DC = 9 km., AB = 6 km., DC = 9 km  
DE = 12 km, BC = 8 km  
So, GE = 20 km, AG = 15 km  
 $EA = \sqrt{20^2 + 15^2} = \sqrt{625} = 25 \text{ km.}$



Q.(4) ANSWER (C) 25 NW

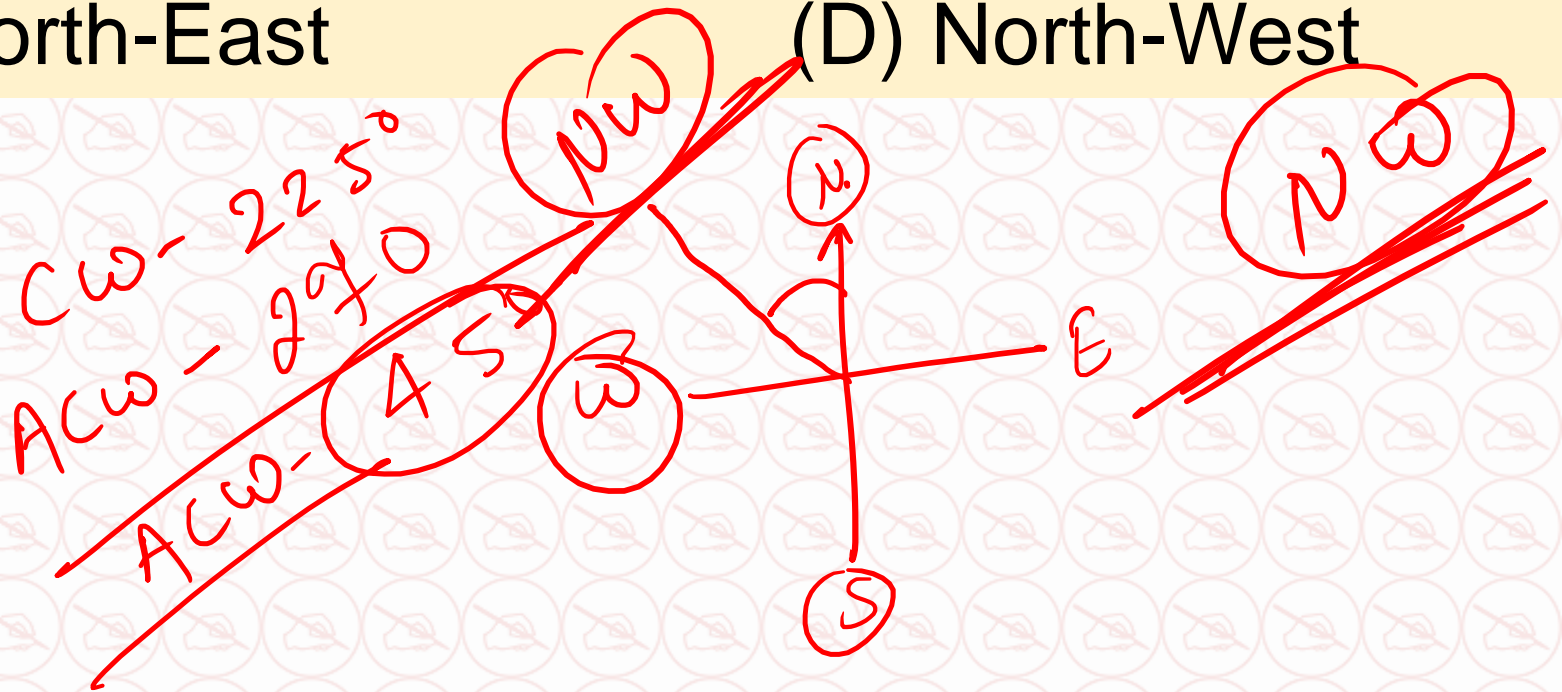
Q. ~~(5)~~ Mahesh is facing North. He turns  $180^\circ$  in clockwise direction and another  $45^\circ$  in the same direction and then  $270^\circ$  in the anticlockwise direction. In which direction he is facing now ?

(A) South-West

(B) South-East

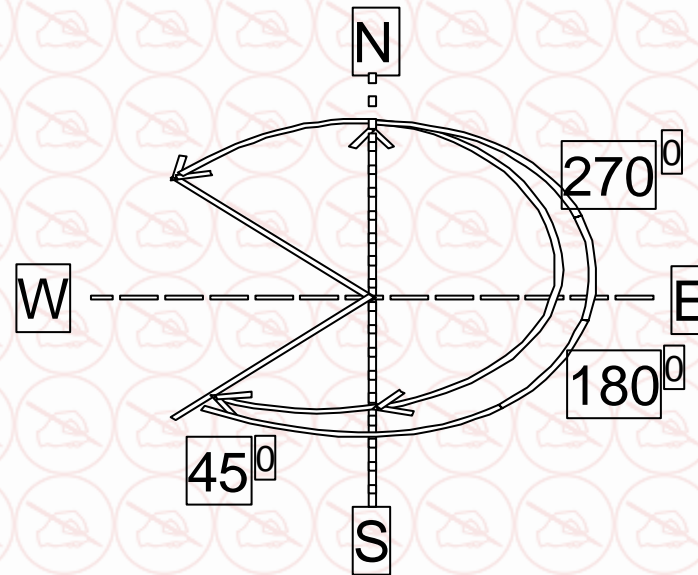
(C) North-East

(D) North-West



# EXPLANATION

Final Direction: North-West. Degrees can only be judged towards the direction in which a person is facing instead of the path covered by him.



Q.(5) ANSWER (D) North-West

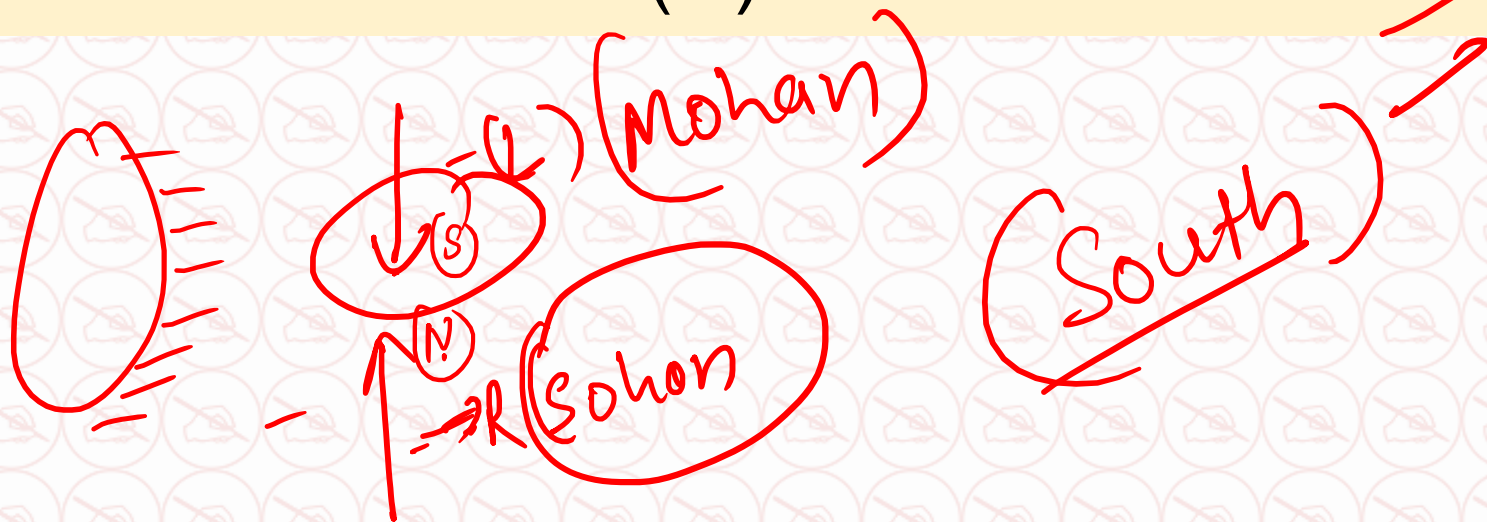
Q.(6) One evening before sunset Mohan and Sohan were talking to each other, face to face. If Sohan's shadow was exactly to the right of Sohan, which direction was Mohan facing ?

(A) North

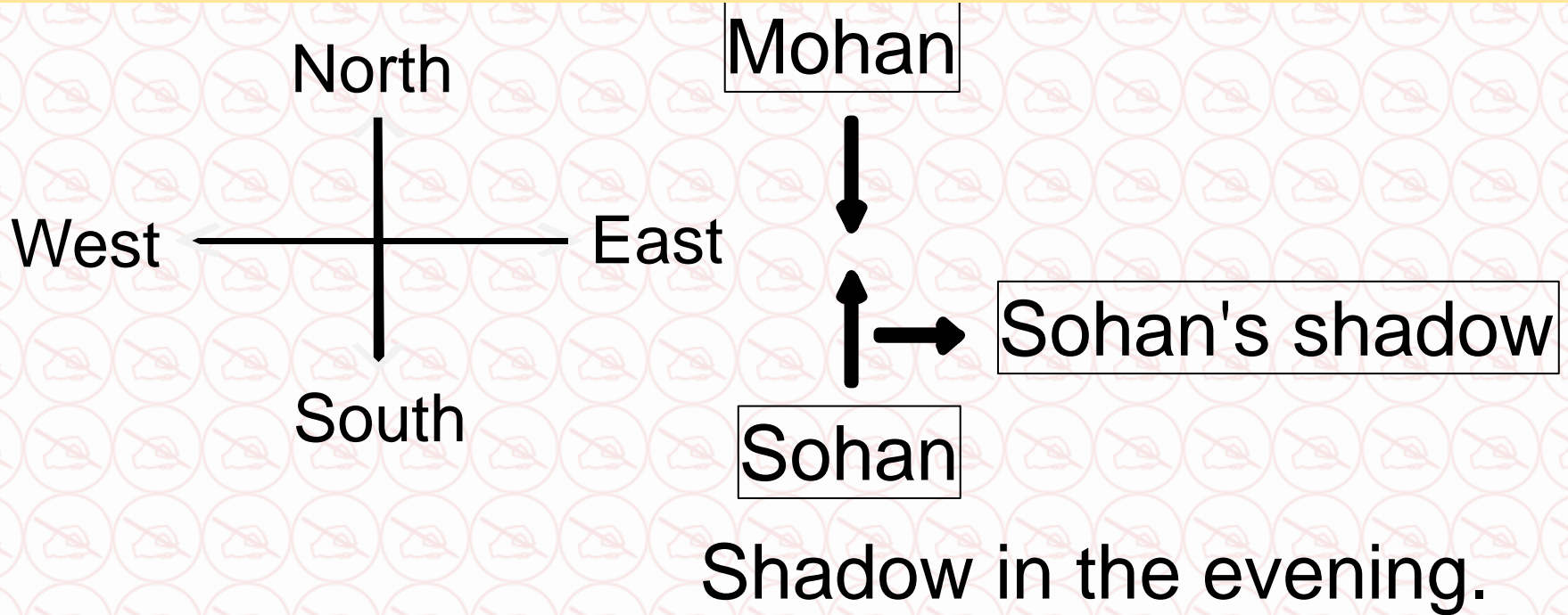
(B) South

(C) East

(D) None of these



# EXPLANATION



Q.(6) ANSWER (B) South

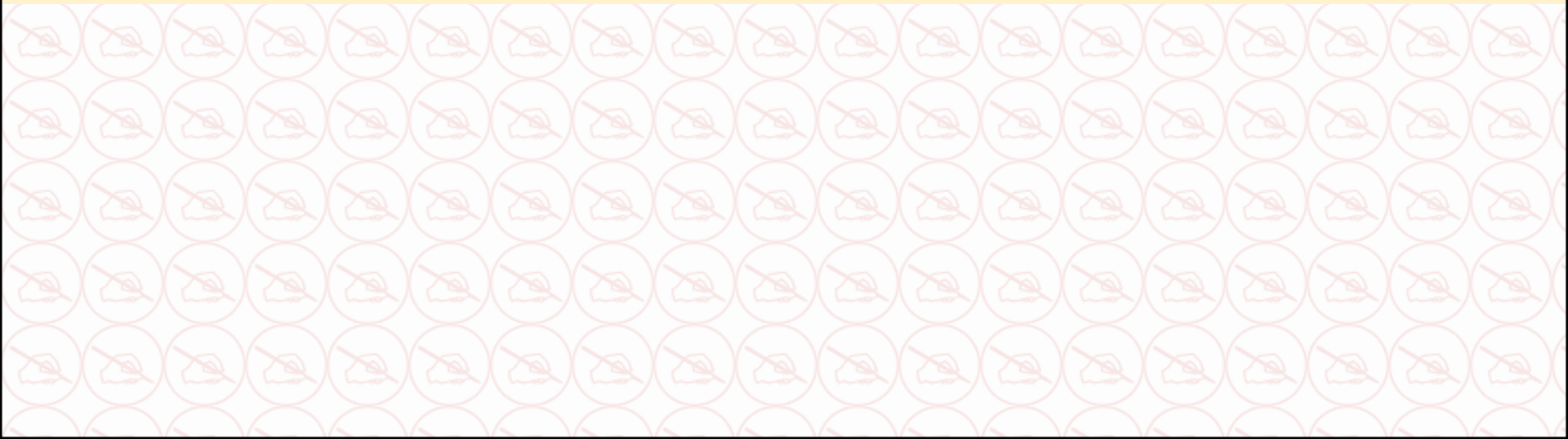
Q.(7) One evening Mayank started walking straight walked 3 kms. turned right walked 4 kms. then turned left walked 6 kms. again turned left and walked for 2 kms. If the shadow of Mayank is at his right side. Then in which direction he started walking ?

(A) North

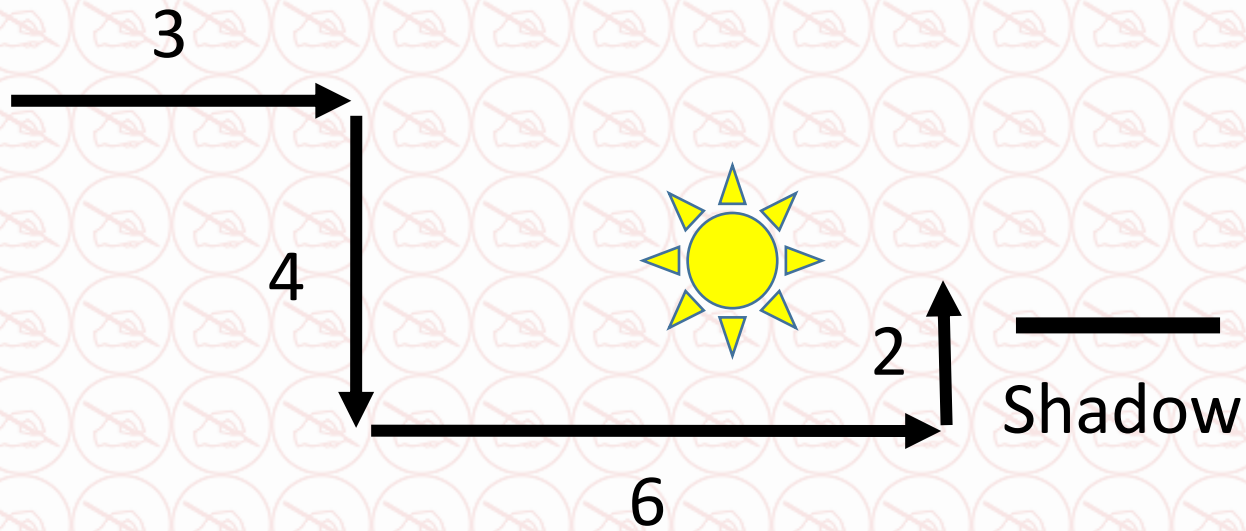
(B) East

(C) South

(D) West



# EXPLANATION



Q.(7) ANSWER (A) North

Q.(8-9) At the time of sunset Sudhir started walking towards sun, walked 9 km then consecutively turn left three times and walked for 2, 6 and 6 km then calculate-

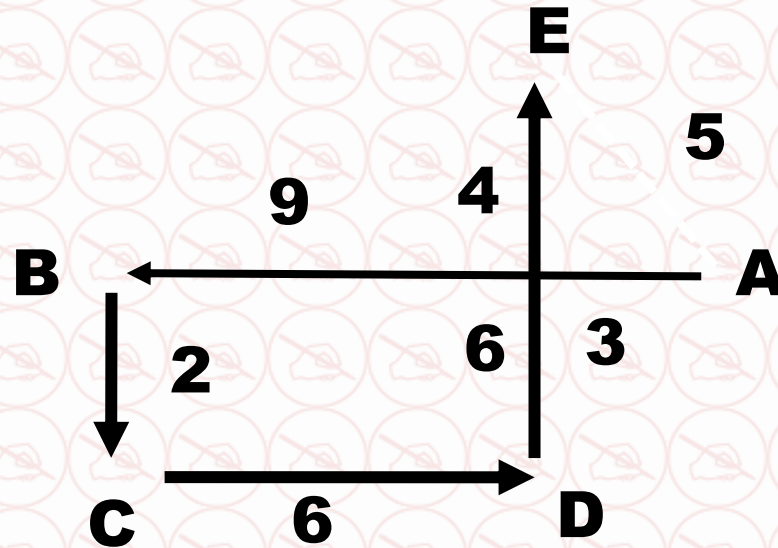
Q.(8) In which direction and how far is Sudhir from the starting point ?

- |                     |                     |
|---------------------|---------------------|
| (A) 5 km South-West | (B) 6 km South-East |
| (C) 6 km North-East | (D) 5 km North-West |





# EXPLANATION



Q.(8) ANSWER (D) 5 km North - west

Q.(8-9) At the time of sunset Sudhir started walking towards sun, walked 9 km then consecutively turn left three times and walked for 2, 6 and 6 km then calculate-

Q.(9) In which direction Sudhir is moving now ?

(A) North

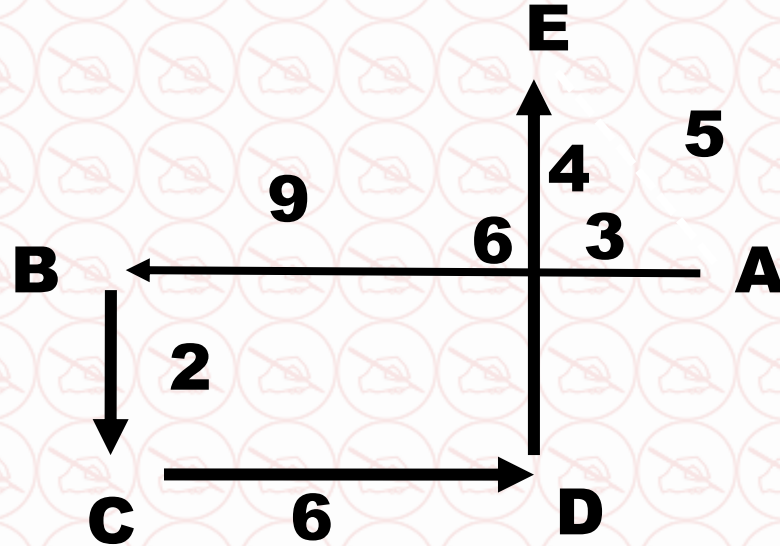
(B) South

(C) East

(D) West



# EXPLANATION



Q.(9) ANSWER (A) North

Q.(10) Ajay started his journey at 7:00 am, after walking 50 km he turn to his right and walked for 70 km, again he turn to his right and walked for 50 km, finally he again turn to his right and walked for 30 km. If he completed his journey with the speed of 20 km/hr and now his shadow is at right side. Then now how far and in which direction he is from the starting point ?

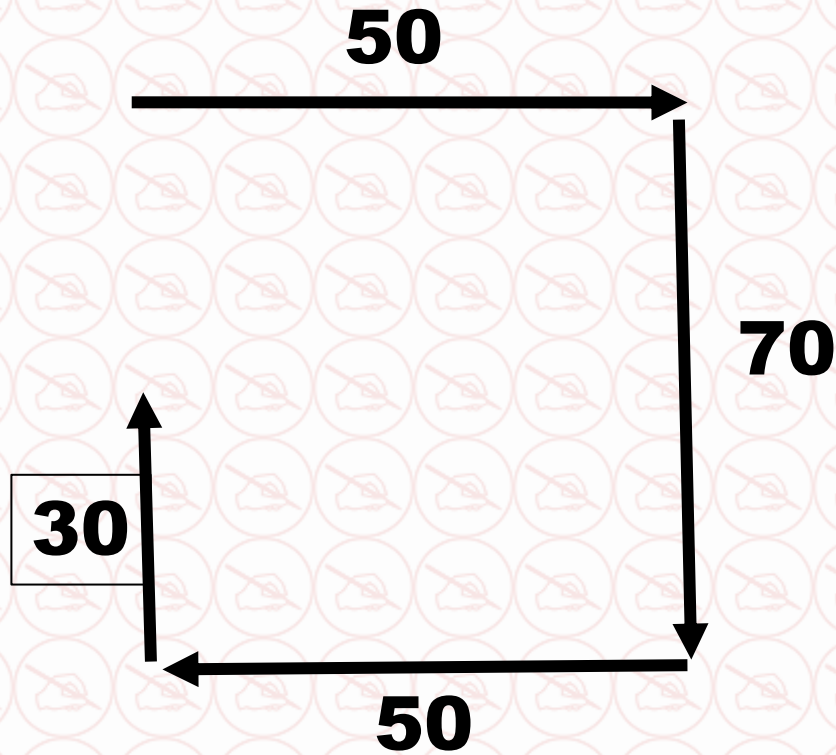
(A) 40 km East

(B) 40km South

(C) 40 km North

(D) 40 km west

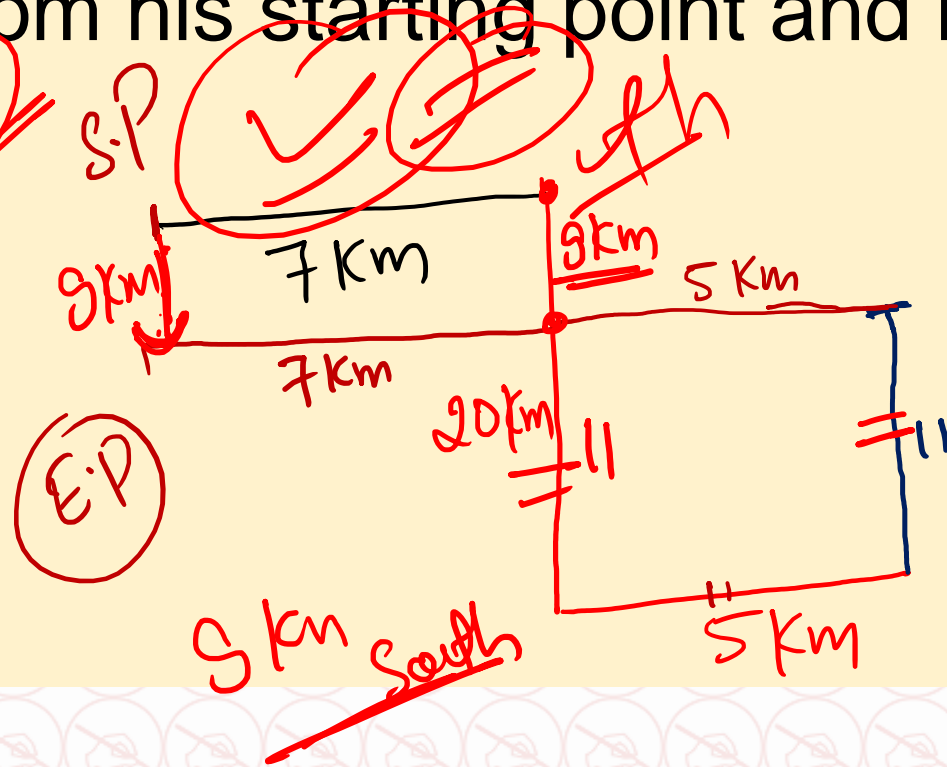
# EXPLANATION



Q.(10) 40 km South

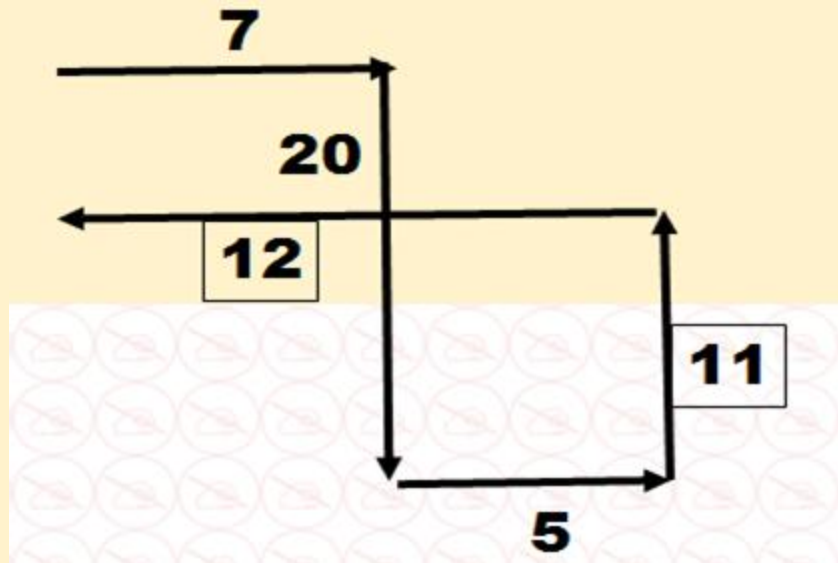
Q.11. Shyam walks 7 km. in the east. Then he turns to his right and moves 20 km, then he turns to his left and moves 5 km, then he turns to his left and moves 11 km. and then again he turned to his left and moves 12 km. Now in which direction is he from his starting point and how far ?

- ~~(A) 9 km South~~
- (B) 64km East
- (C) 20 km west
- (D) 7 km south



# EXPLANATION

**ANS OPTION (A) 9 km South**



Q.12. Garima 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?

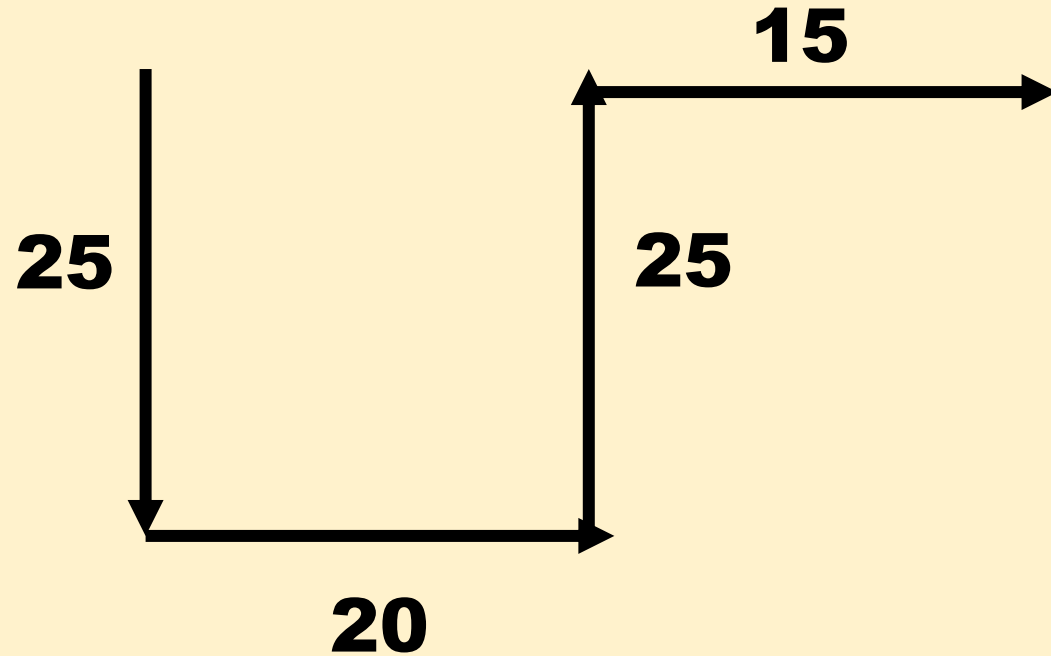
- (A) 35 m East
- (B) 35 m North
- (C) 30 m West
- (D) 45 m East





# EXPLANATION

**ANS OPTION (A) 35 m East**



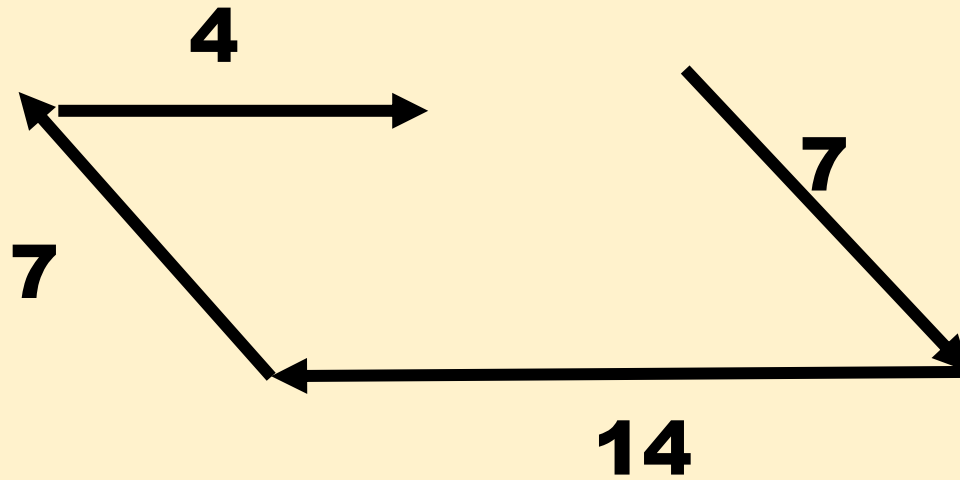
Q.13. Mr. Khan moves towards South-East a distance of 7 km, then she moves towards West and travels a distance of 14 km. From here she moves towards North-West a distance of 7 km and finally she moves a distance of 4 km towards east. How far is she now from the starting point?

- (A) 3 km
- (B) 4 km
- (C) 10 km
- (D) 11 km



# EXPLANATION

ANS .13. (C) 10 km



Directions (14-16): Point D is 2 km to the north of point C. Point G is 8 km to the north of point H. Point A is 15 km to the south of point B. Point C is 8 km to the east of point B.

Point E is 10 km to the north of point F which is 4 km to the west of point G. Point D is 4 km to the west of point E.



Q.14. Find shortest distance BH.

(A)  $16\sqrt{4}$  km

(B) 32 km

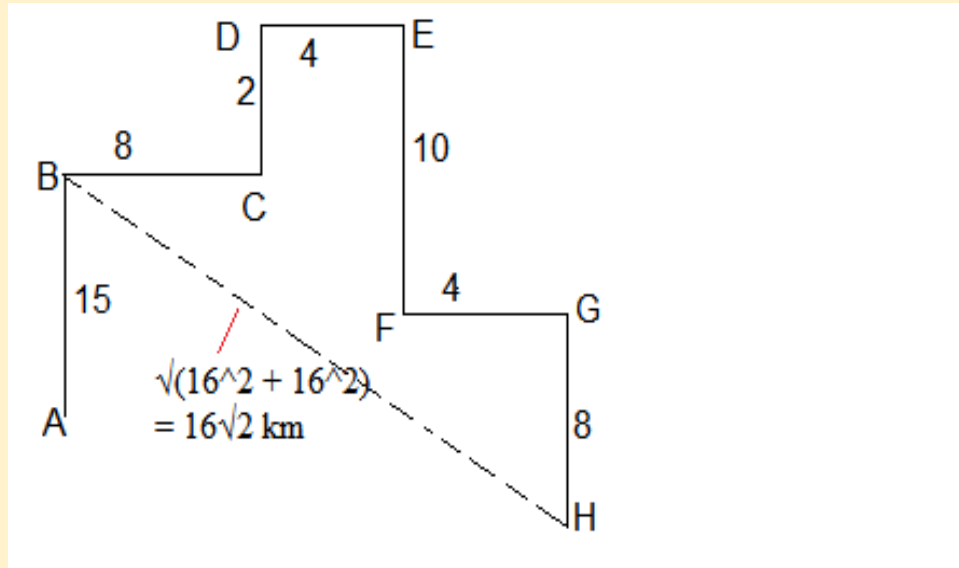
(C) 15 km

(D)  $16\sqrt{2}$  km



# EXPLANATION

Ans D



Q.15. If a person after taking 2 turns reaches to point B from point F via point A, then what is the distance that he covered?

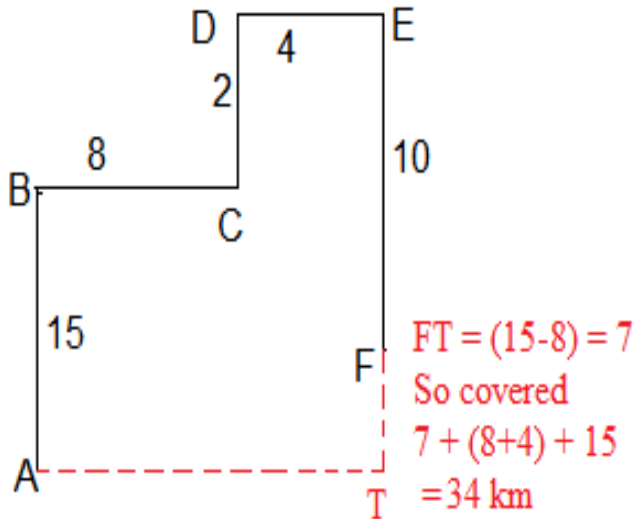
- (A) 32 km
- (B) 34 km
- (C) 30 km
- (D) 35 km



# EXPLANATION

Ans b

Only possibility:





Q.16. If a person starts from point H and reaches point S which is south of point C, then find distance  $CS + HS - EF$ .

- (A) 12 km
- (B) 13 km
- (C) 15 km
- (D) 14 km



# EXPLANATION

Ans D

Point S is south of point C, so  $CS = 8+8 = 16$  km,  $HS = 4+4 = 8$  km and  $EF$  is 10 km

So required answer =  $16 + 8 - 10 = 14$  km

