

# GATE



## ALL BRANCHES

### GENERAL APTITUDE

#### Analytical Aptitude



Lecture No: 02

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# TOPICS TO BE COVERED



Understanding NEWS



Answering without diagram



Concept of Coding Decoding



Questionnaire on the Topic





Direction:  $X+Y$  means X is the father of Y,  $X-Y$  means X is the wife of Y,  $X \times Y$  means X is the brother of Y,  $\underline{X} \div Y$  means X is the daughter of Y.

In  $A \times B \div C$ , which of the following statement is true?



A is the uncle of C X



A is the father of C X



A is the son of C



A is the brother of C X

Assignment





Q.

Rohit said to Mohit, "The boy playing basket ball is younger brother of the two brothers of the daughter of my father's wife". How is the boy playing basket ball related to Rohit? *my mother*



A.

Brother-in-law



B.

Nephew



C.

Cousin



D.

Brother

Assignment



Q.

Introducing Swapna, Madhavi said, "She is the only daughter of my father's only daughter". How is Madhavi related to Swapna?

me

Assignment



A.

Niece



B.

Aunt



C.

Cousin



D.

None

Mother





**Q.** A, the son of B was married to C, whose sister D was married to E, the brother of A. How is D related to B?



**A.** Daughter-in-law



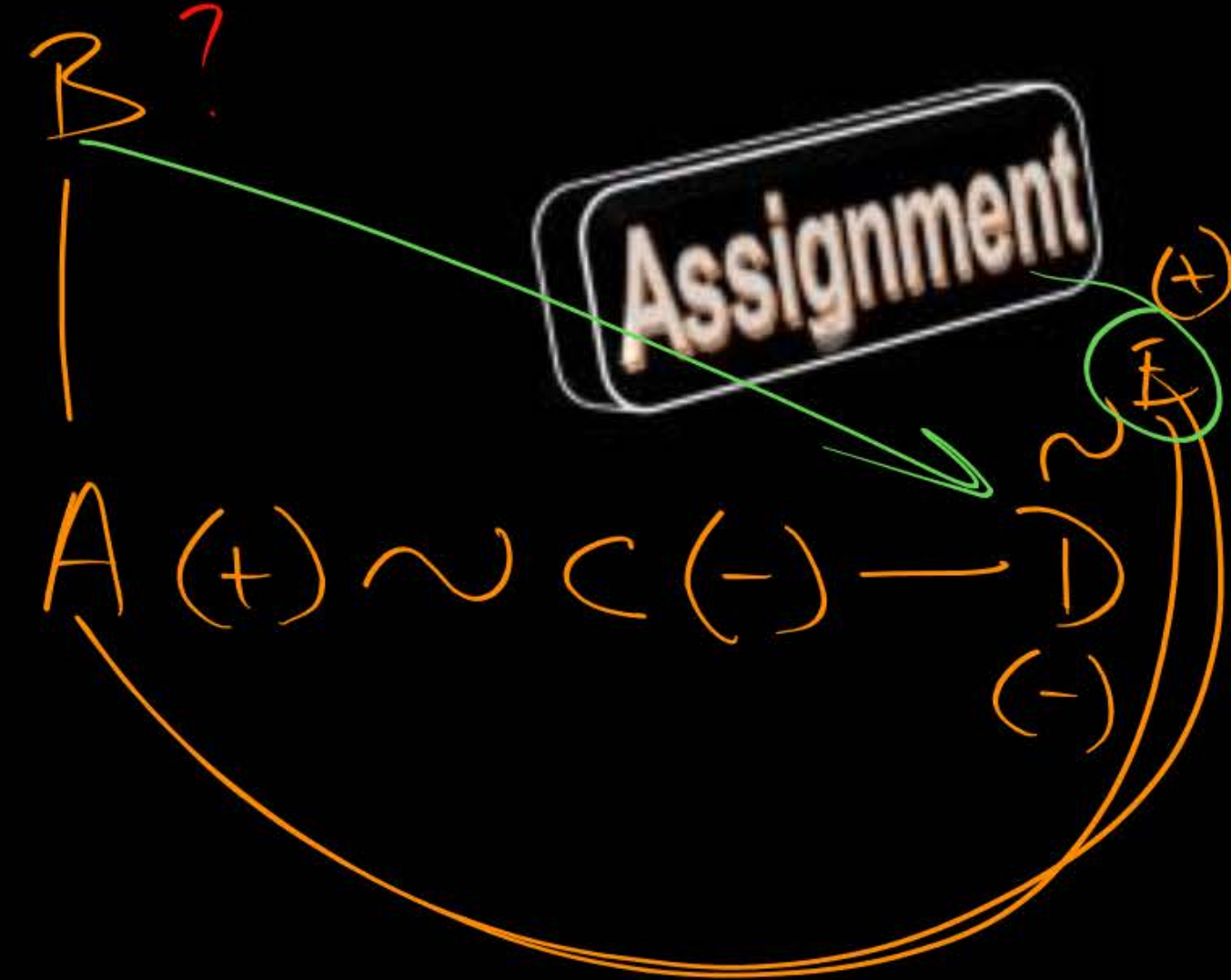
**B.** Sister



**C.** Cousin

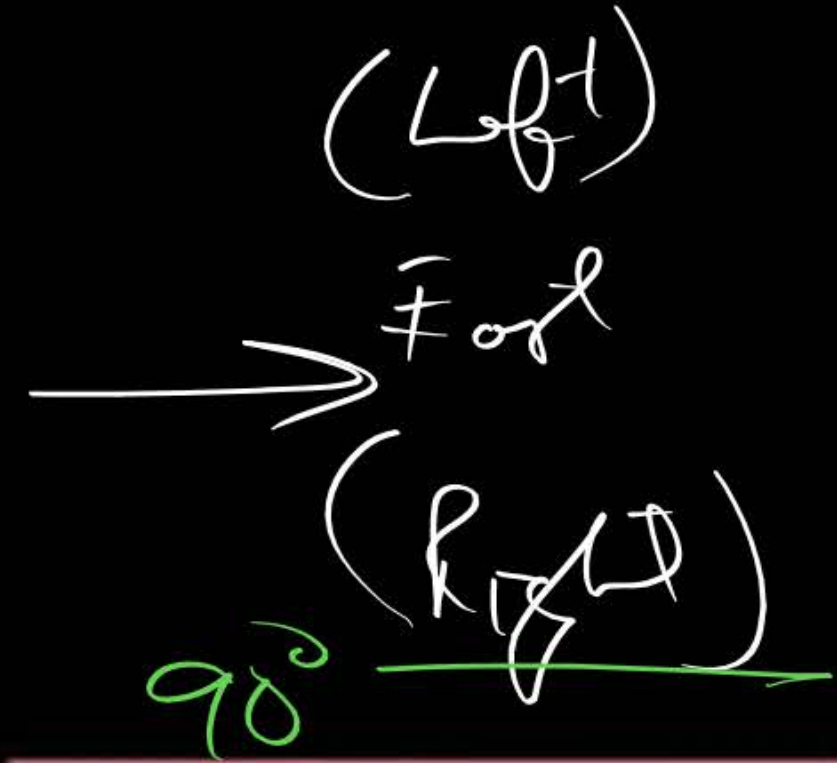
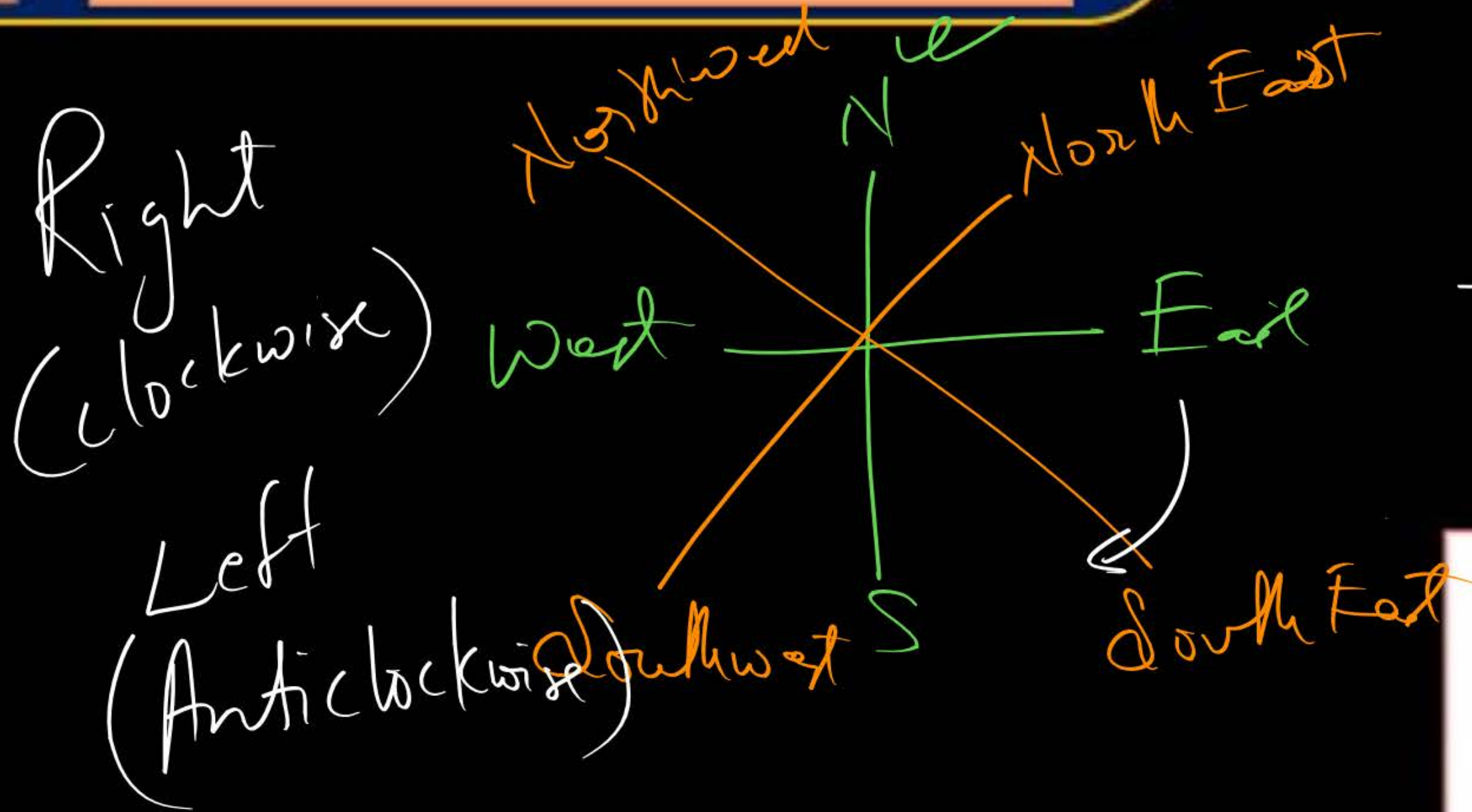


**D.** Sister-in-law

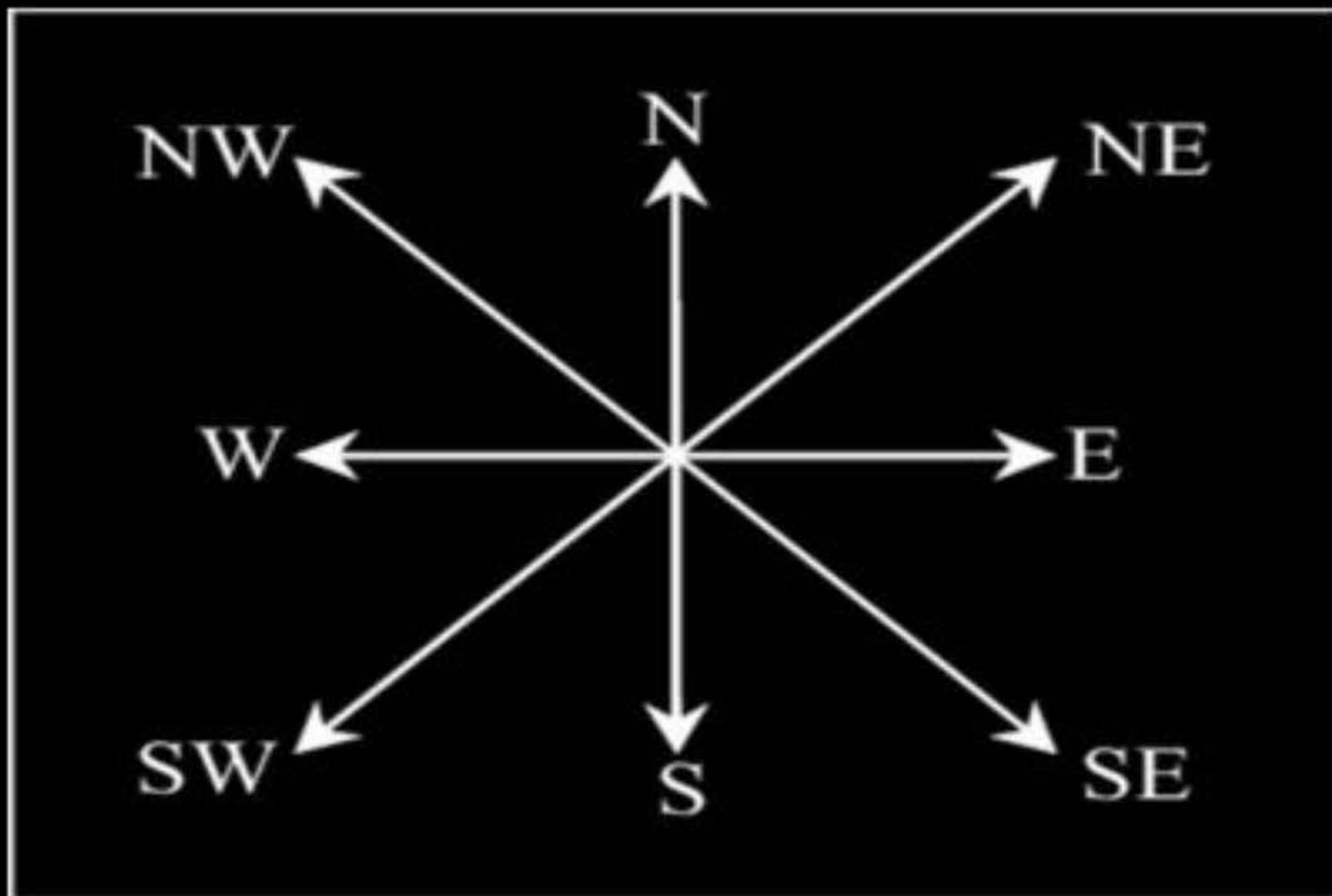




# DIRECTION SENSE





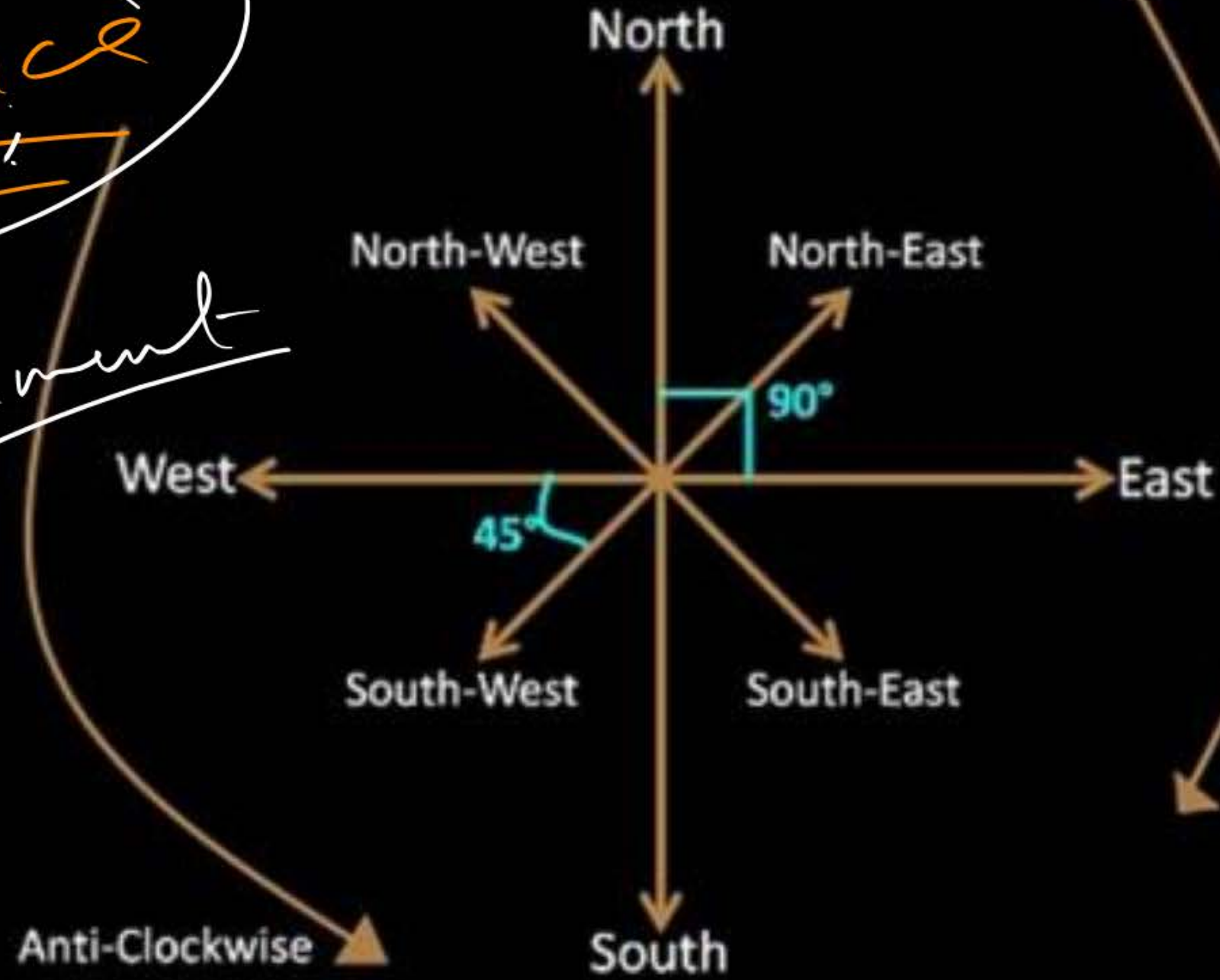






Distance

Displacement



Directional Sense

- 1.
- 2.
- 3.
- 4.
- 5.





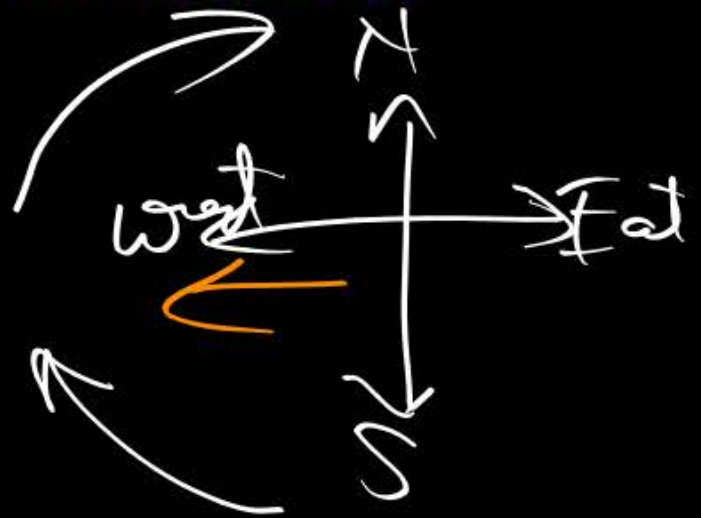


Q.

Facing towards south Suresh walked 50 mts. He then turned to his right and walked 30 mts. He again turned right and walked 50 mts. How far was he from his original position and towards which direction?

S 50 W 30 N 50

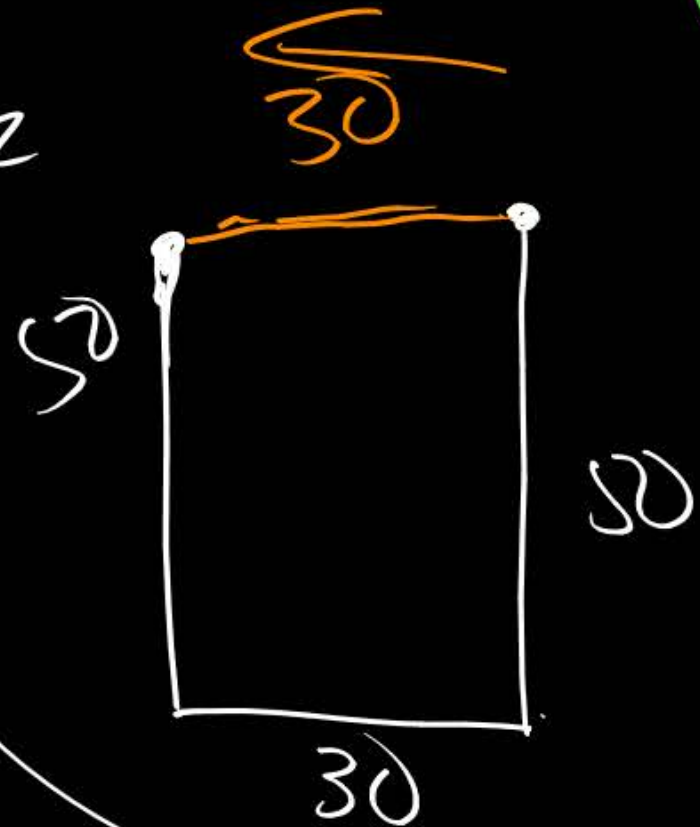
30 m West



$$= \sqrt{1^2 + 1^2}$$

$$= \sqrt{30^2 + 6^2}$$

$$= \sqrt{30^2 + 30^2}$$



1. Vertical Distance 0

2. Horizontal Distance 30 West

3. In which direction the person is facing at last North

4. In which direction he is as compared from origin West  
5. How far from origin



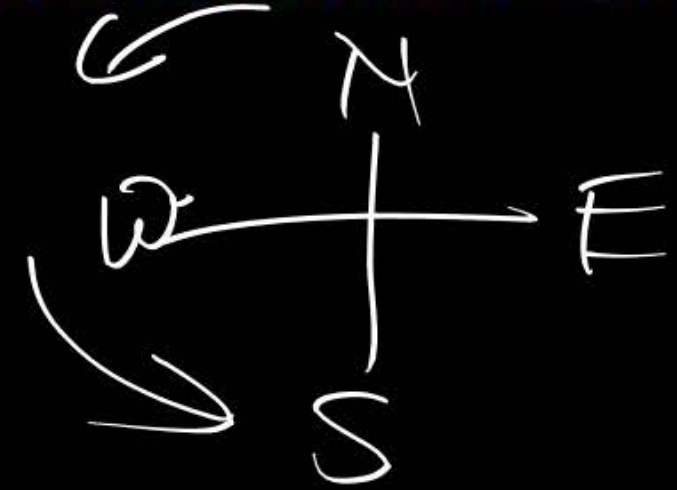


Q.

Maahesh started walking towards North. After walking 30 metres, he turned towards left and walked 40 metres. He then turned left and walked 50 metres. How far is he from his original position?

$$44.72m = \sqrt{H^2 + V^2}$$

$$\sqrt{40^2 + 20^2}$$



$$= \sqrt{1600 + 400}$$

$$= \sqrt{2000}$$

$$= \sqrt{4 \times 5 \times 100}$$

H  $\Rightarrow$  40m West  
V  $\Rightarrow$  20m South

$$= 2 \times 10 \sqrt{5}$$

$$= 20\sqrt{5}$$

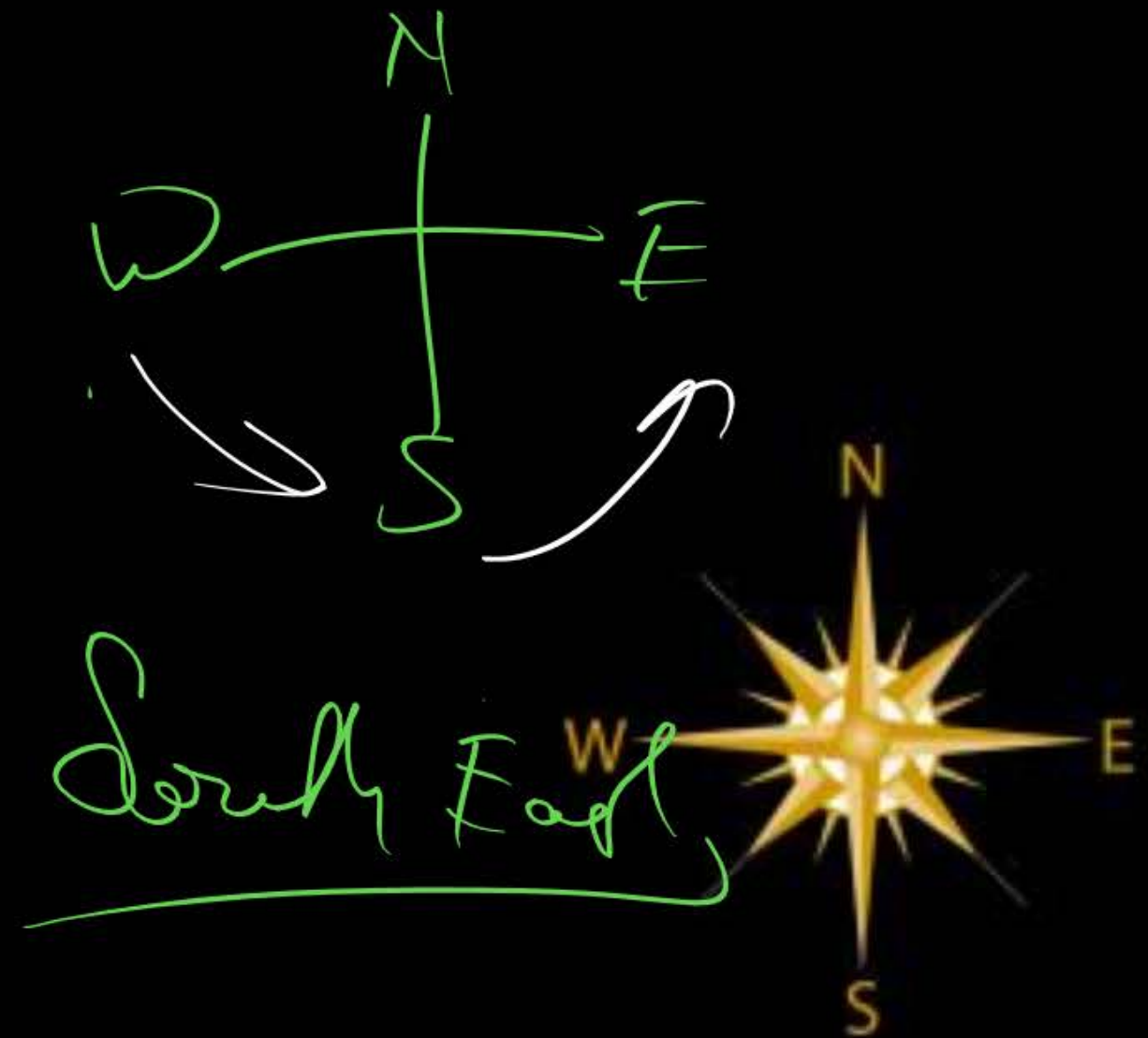
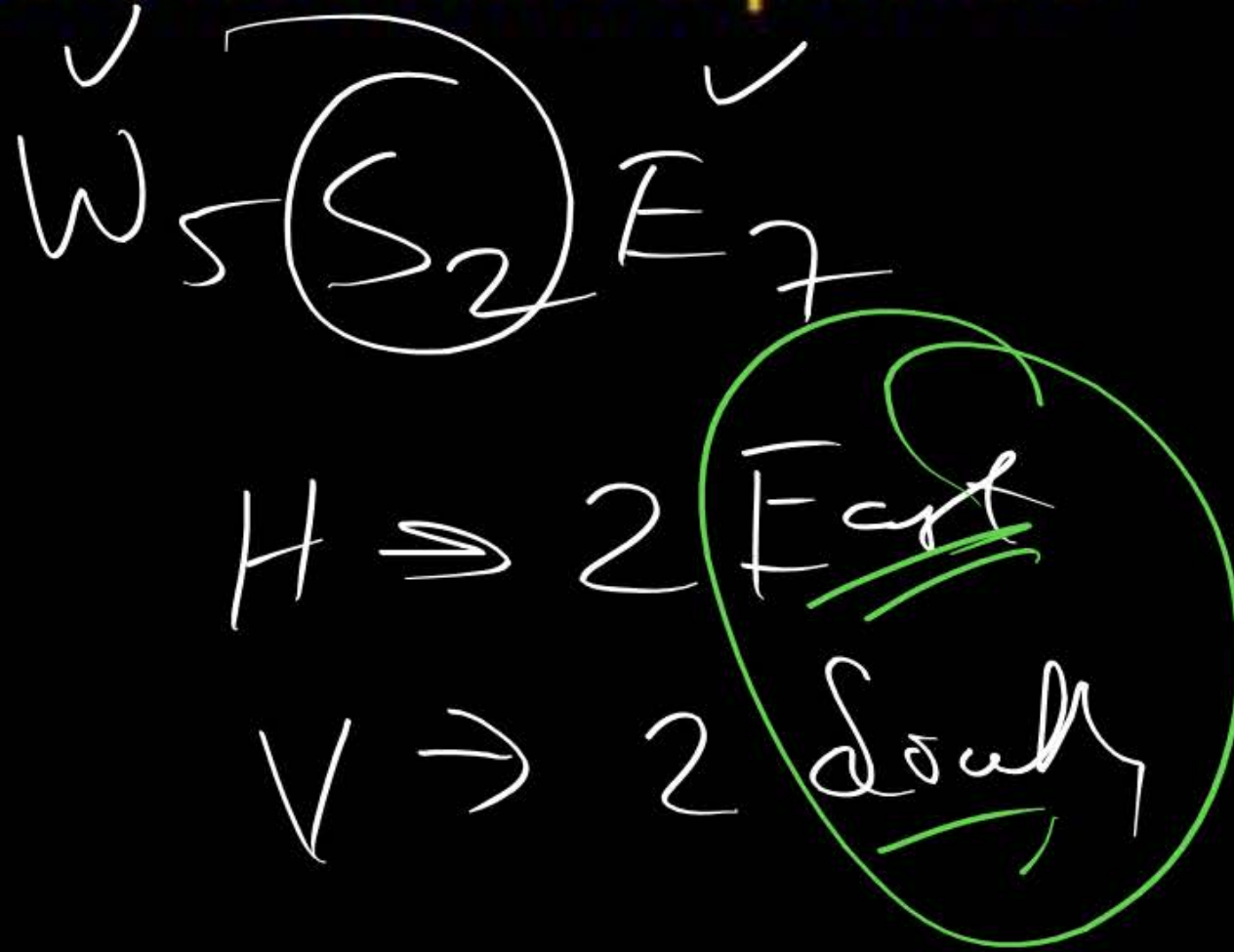






Q.

Mohit started from point X and walked straight 5 km West, then turned left and walked straight 2 km and again turned left and walked straight 7 km. In which direction is he from the point X?

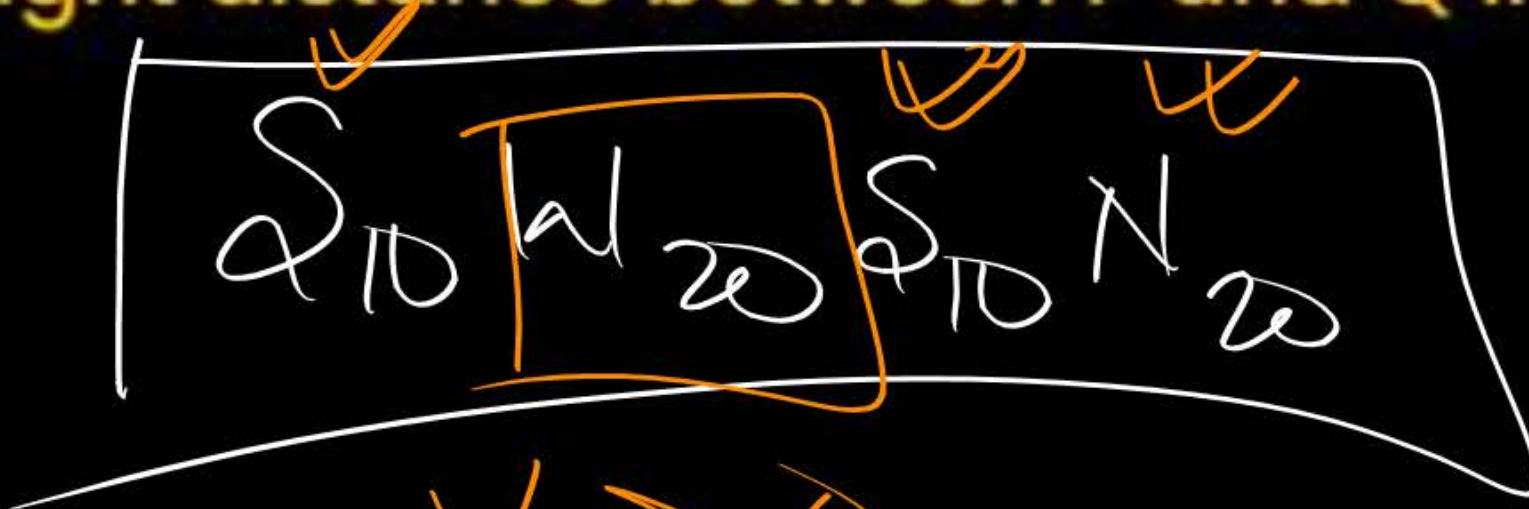
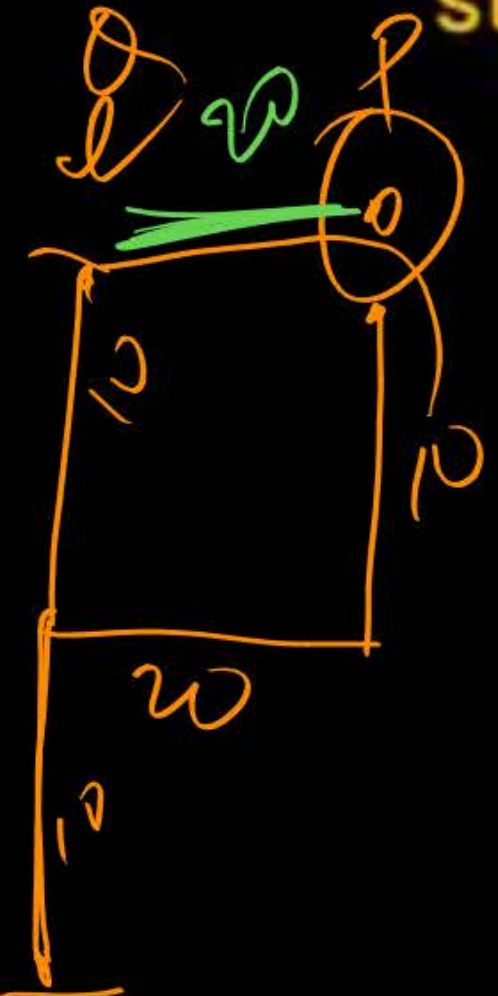






Q.

A is standing at P. He walks 10 meters towards the south; then he walks 20 meters towards the west; then he walks 10 meters towards the south; then he walks 20 meters towards the North and reaches Q. What is the straight distance between P and Q in meters?

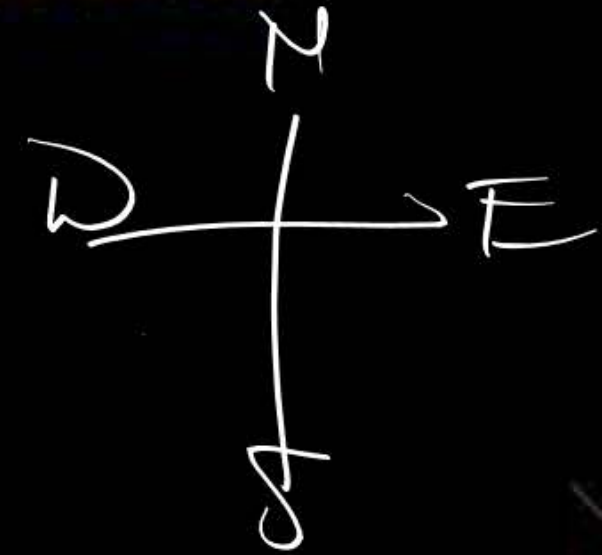


V  $\Rightarrow$  0

H  $\Rightarrow$  20 West

$$= \sqrt{20^2 + 0^2}$$

$$= \sqrt{20^2} = 20 \text{ m West}$$

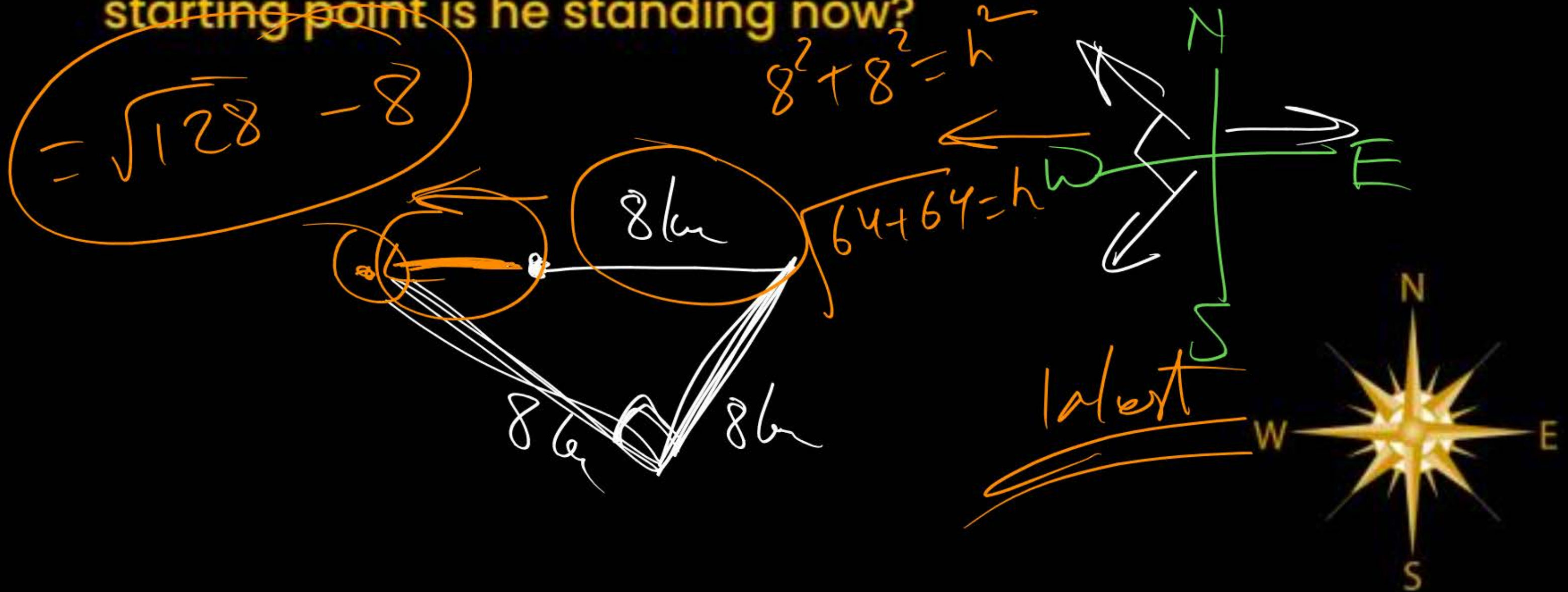






Q.

Sumit walks 8 km east, turns South-West and walks another 8km. He again takes a turn towards North-West and walks another 8km. In which direction from starting point is he standing now?

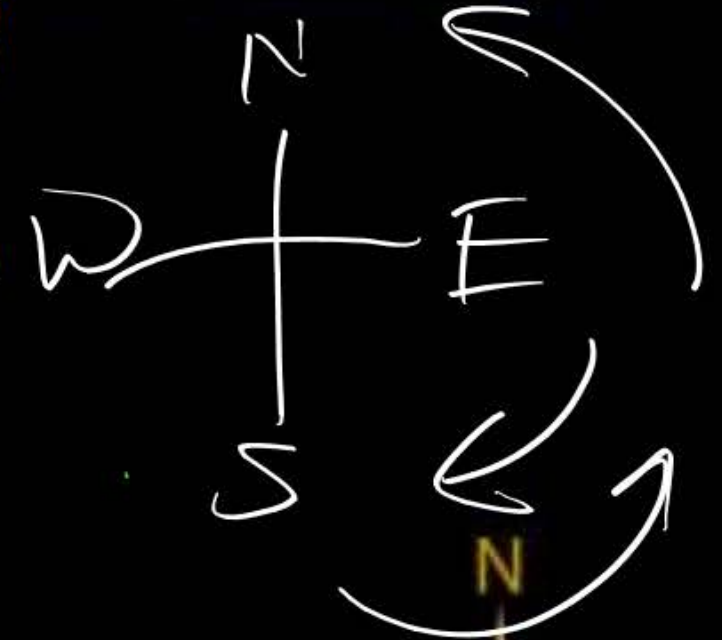






A walks 10 metres towards East and then 10 metres to his right, then every time turning to his left, he walks 5.15 and 15 metres respectively. How far is he now from his starting point?

$E_{10} \quad S_{10} \quad E_{5.15} \quad N_{15}$



A. 16.55



B. 6.965

$H \rightarrow 15.15$  (East)

$V \rightarrow 5$  (North)



C. 15.0



D. 15.95

$$= \sqrt{(15.15)^2 + 5^2} = \sqrt{254} = \underline{15.95m}$$







Q. A man is facing North-West. He turns  $90^\circ$  in the clock wise direction, then  $135^\circ$  in the anticlockwise direction which direction is he facing now?



A. North



B. South-east



C. West



D. South-west

$90^\circ$  Clockwise  
 $135^\circ$  Anticlockwise

$45^\circ$  Anticlockwise







Q. 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 kilometers will he have to cycle to reach his home straight?



A. 5 km

~~S 10~~ W 5 ~~N 10~~ W 10



B.

15 km

H  $\Rightarrow$  15 (west)

V  $\Rightarrow$  0



C. 12 km



D.

None of these

15 west





**Q.**

P, Q, R and S are playing a game of carom. P, R and S, Q are partners. S is to the right of R, who is facing West. Then, Q is facing?

*Assignment*



**A.**

North



**B.**

South



**C.**

East



**D.**

Can't be determined







Q. One evening before sunset, two friends Sumit and Mohit were talking to each other face to face. If Mohit's shadow was exactly to his right side, which directions was Sumit facing?

Assignment

A.  East

B.  North

C.  West

D.  South





Q.

After walking 6 km, I turned right and covered a distance of 2 km, 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.

North-west



C.

East



D.

None of these

**Assignment**





Q. Vikas starts walking straight towards east. After walking 75 meters, he turns to the left and walks 25 meters straight. Again, he turns to left walks a distance of 40 meters straight, again he turns to left and walks a distance of 25 meters. How far is he from the starting point?

**Assignment**





Q.

A, B, C and D are standing on four corners of a square piece of plot as shown in the given figure. From the original position, D starts crossing the field diagonally. After walking half the distance he turns right, walks some distance and turns left. Which direction is D facing now?



A.

South-east



B.

North-west



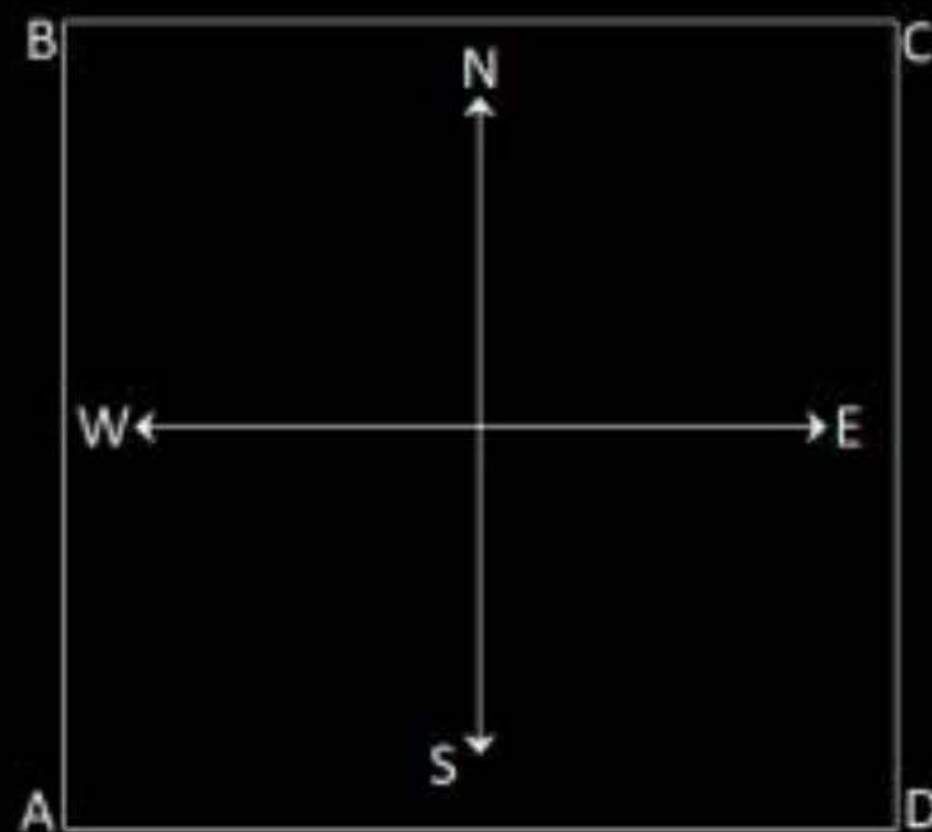
C.

South-west



D.

South



Assignment





# CODING DECODING



- ALPHABETICAL / LETTER
- NUMBER
- SUBSTITUTION
- MIXED

$$\begin{array}{r} 26 \\ 27 \\ \hline 26 \end{array}$$

I am a teacher

I  
A  
26

I  
18

27  
26  
18  
7

13  
14

14  
13





Q.

In a certain code GIGANTIC is written as GIGTANCI. How is MIRACLES written in that code?

GIGANTIC → GIGTANCI

MIRACLES → MIRACSE



A.

RIMLASCE



B.

RIMLACSE



C.

RMLIASCE



D.

RIMLSCAE





In a certain code MAN is written as SANM and WORD is written as SORDW. How would SALE be written in that code?

MAN → SANM  
WORD → SORDW



SEALS



LEASS



LESAS



SALES

SALE

→ SALES



Q. If CURE is written as BTQD. How will MAIL be written in that code?

$\text{CURE} \rightarrow \text{BTQD}$

$\text{MAIL} \rightarrow \text{LZHK}$

A. LZGS

B. LZKH

C. LZHK

D. LYHK







Q.

If in a certain code TWENTY is written as 863985 and ELEVEN is written as 323039, how is TWELVE written in that code?

TWENTY

→ 863985

ELEVEN

→ 323039

863203  
TWELVE

A. 863203

B. 823230

C. 823032

D. 863903





Q. If in a certain language PRIVATE is coded as 1234567 and RISK is coded as 2398, how is RIVETS coded in that language?

PRIVATE  
1 2 3 4 5 6 7

RISK  
2 3 9 8

A. 687543

B. 234769

RIVETS  
2 3 4 7 6 9

C. 496321

D. 246598





Q. If water is called food, food is called tree, tree is called sky, sky is called wall, on which of the following grows a fruit?

A. Sky

B. Tree

C. Water

D. Food

① Mohan is called Mohit

word Mohan      Code Mohit

② Mohan means Mohit

word Mohit      Code Mohan



If sky is called sea, sea is called water, water is called air,  
air is called cloud and cloud is called river, then what do  
we drink when thirsty?

**A.**  Sky

**B.**  Water

**C.**  Air

**D.**  Sea





Q.

In a certain code language '389' means 'run very fast' '964' means 'come back fast' and '487' means 'run and come'. Which digit in the language means 'come'?

Handwritten solution:

9 → fast  
 8 → Run  
 4 → Come  
 3 → Very  
 6 → back  
 7 → And

Analysis of code words:

- 389 → Run very fast (3 is underlined, 9 is circled)
- 964 → Come back fast (9 is circled, 6 is underlined, 4 is circled)
- 487 → Run and Come (4 is circled, 8 is underlined, 7 is circled)

Options:

- A. 9
- B. 4 (Correct answer, circled in green)
- C. 7
- D. 8



In a certain code SOCIAL is written as TQFMFR, then how you will code DIMPLE?



Assignment



EKPTQK



EKPQPJ



EKPSPJ



EKP SOH





Q.

If light means red, red means green, green means white, white means yellow. What is the colour of blood?

Assignment



A.

red



B.

yellow



C.

blue



D.

light



If 'col tip mot' means 'singing is appreciable'; 'mot baj min' means 'dancing is good' and 'tip nop baj' means singing and dancing'. Which of the following means 'good' is that code language?

Assignment

A.  min

B.  baj

C.  nop

D.  None of these





Q.

If according to a certain code, PAINTER is written as 3528617, then TANRPEI is coded as?

Assignment



A.

6587312



B.

6583721



C.

9385472



D.

9385427

