

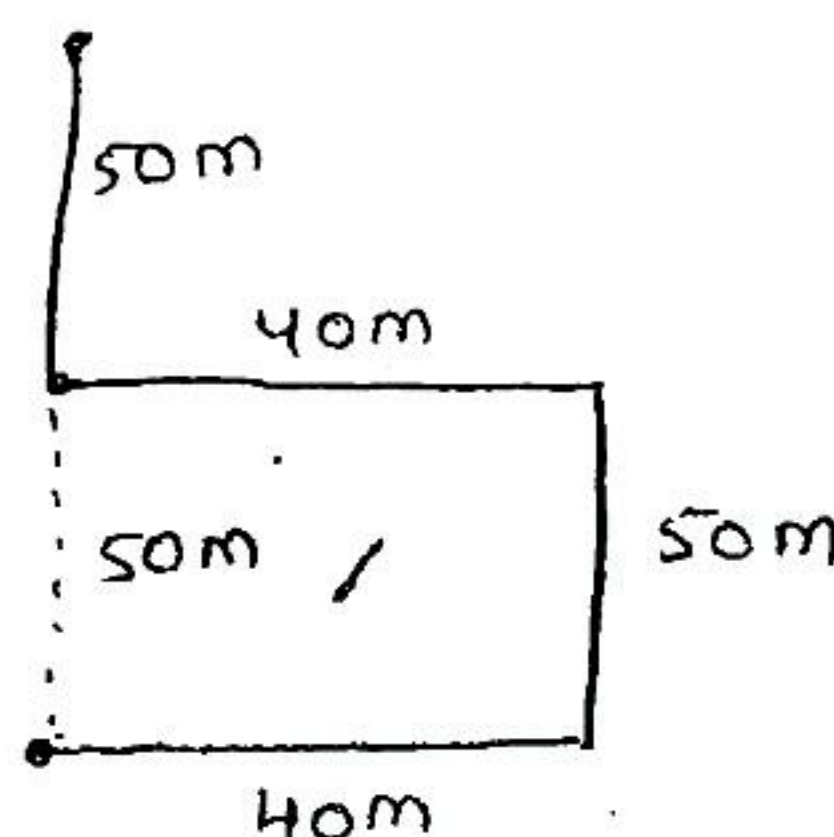
DIRECTION AND DISTANCES

1. A man moves towards east and covers a distance of 40m then turns north and covers a distance of 50m. Then turns west and covers a distance of 40m, then turns north and covers 50m. How far is he from his starting position?

A) 100 m

(or)

$$\begin{array}{cccc} E_{40} & N_{50} & W_{40} & N_{50} \\ \text{add } 50 + 50 = 100 \text{ m} \end{array}$$



(Different directions subtract, same direction add)

Note:-

Like in above type of problems if only one person covers the distance, in same direction add them. Eg:- $E + E + E + \dots$
 $W + W + W + \dots$ $S + S + S + \dots$ $N + N + N + \dots$

In opposite direction subtract them. Eg:- $E - W$, $W - E$,
 $S - N$, $N - S$

2. A woman moves towards north and covers a distance of 50m then turns east and covers 80m then turns south and covers 50m then turns west and covers 30m. How far is she from her starting position?

A) N_{50} E_{80} S_{50} W_{30} $50 - 50 = 0$

$\Rightarrow 80 - 30 = 50 \text{ m}$ (different direction)

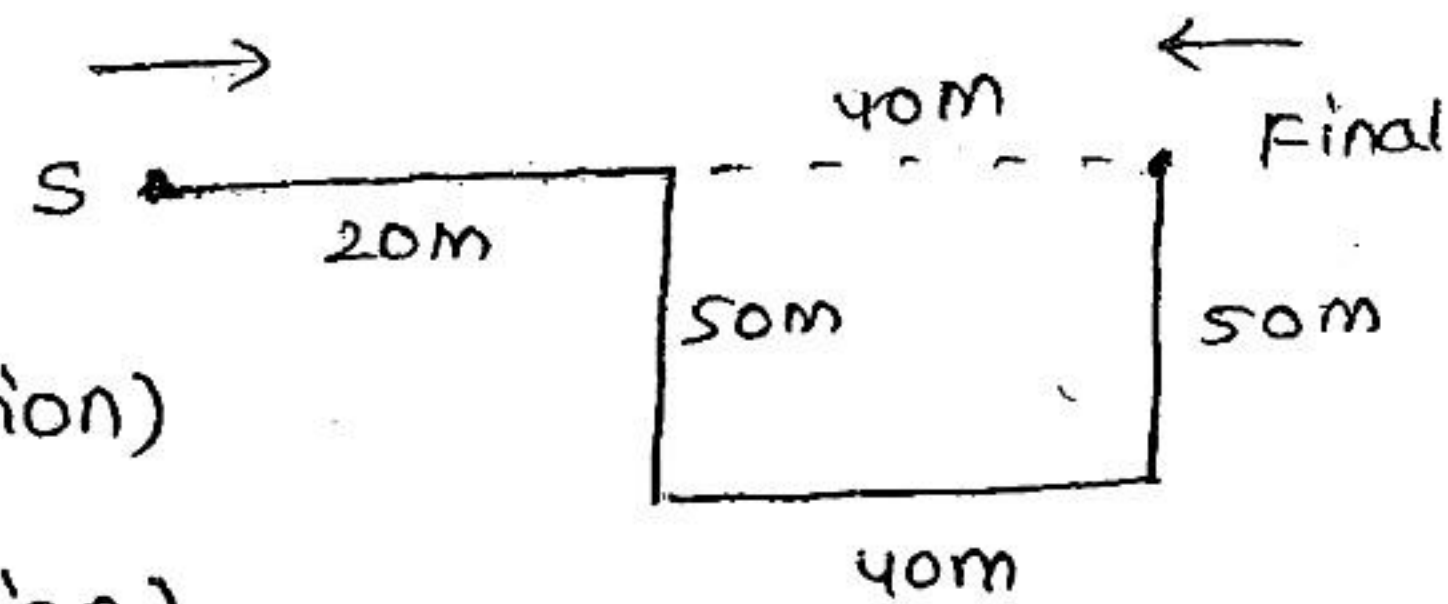
3. Raju moves towards east and covers a distance of 20m then turns south and covers a distance of 50m then turns east and covers a distance of 40m then turns north and covers a distance of 50m. How far and which direction is he from his starting position?

A) E_{20} S_{50} E_{40} N_{50} $\Rightarrow 20 + 40 = 60 \text{ East}$

$$\Rightarrow 20 + 40$$

$\Rightarrow$ 60m East (starting position)

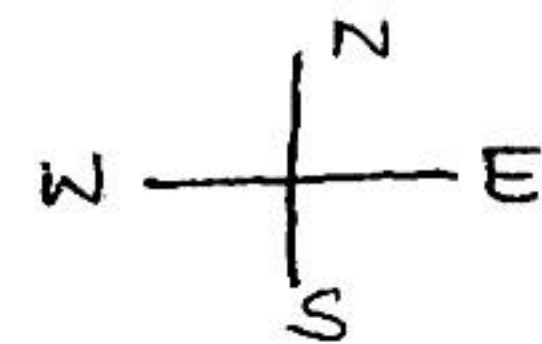
$\Rightarrow$ 60m West (Final position)



Note:-

1. If directions asked from starting position (or) initial (or) original position then your direction is obtain ~~it~~ ^{one} only.
2. If direction asked from final position (or) end (or) reached position, then your direction is opposite of obtain one.
3. A rangeela drive towards south and covers a distance of 20 km then turns east and covers 50m then turn south and covers 30 km then turns west and covers 50 km they turn south covers 40 km. How far and in which direction is she from a reached position.

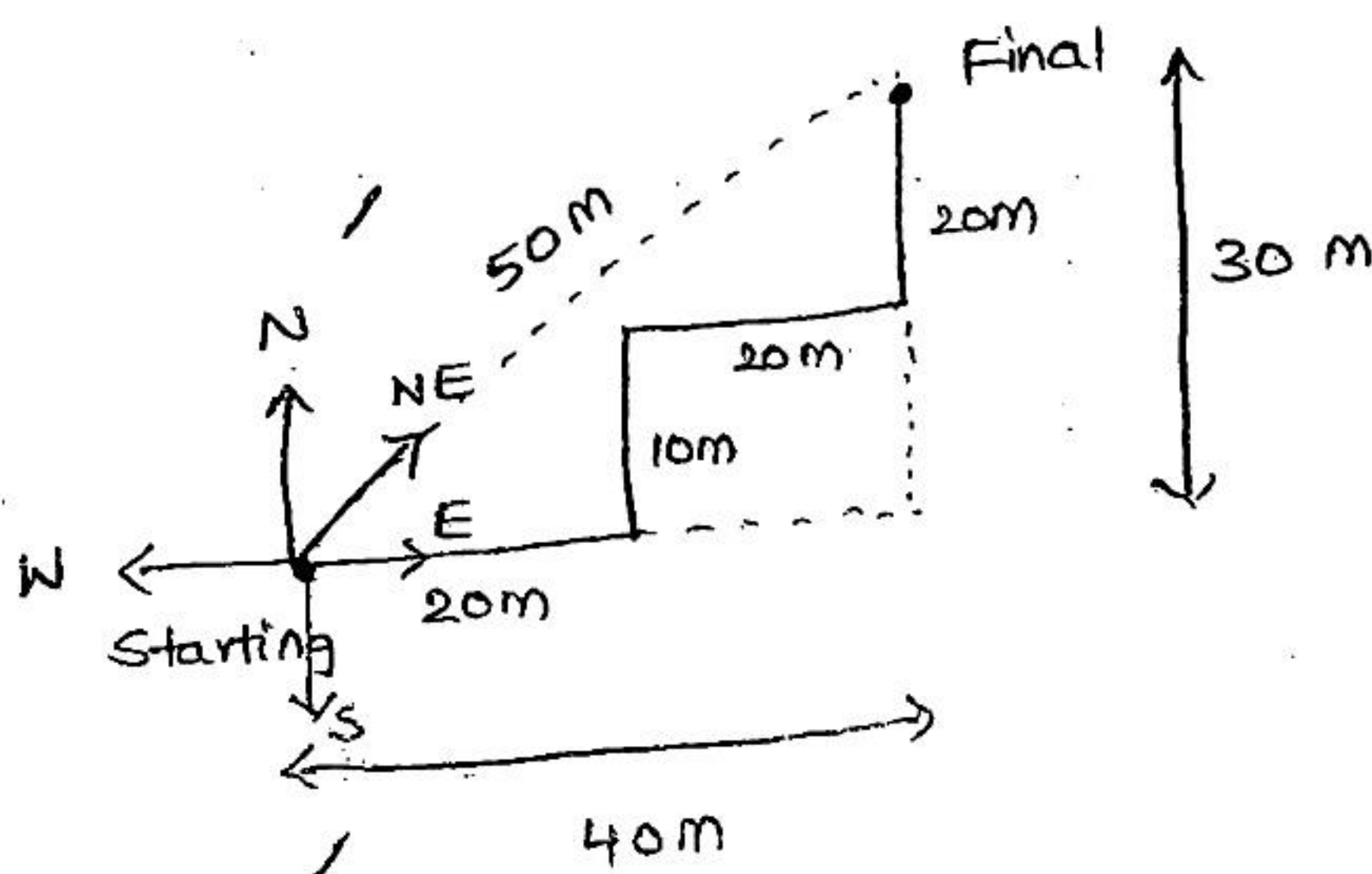
A) S_{20} E_{50} S_{30} W_{50} S_{40}



$$\Rightarrow 20 + 30 + 40 = 90 \text{ km North.}$$

4. Arun moves towards east and covers a distance of 20m then turns north and covers a distance of 10m then turns east and covers 20m then turns north and covers 20m. How far and in which direction is he from his initial position.

A)



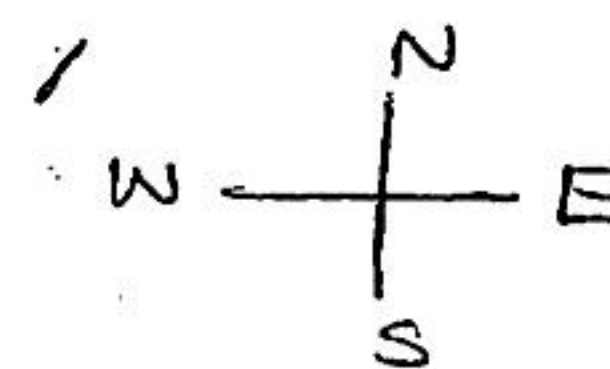
$$\Rightarrow 50 \text{ m NE}$$

(or)

$$\begin{matrix} E_{20} & N_{10} & E_{20} & N_{20} \\ \curvearrowright & & \curvearrowright & \\ E_{40} & N_{30} & \Rightarrow \sqrt{40^2 + 30^2} = 50 \\ & & \Rightarrow 50 \text{ m NE} \end{matrix}$$

5. Suri moves towards east and covers a distance of 30m then turns left and covers 20m, then turns left and covers 30m, then turns right and covers 20m. How far and in which direction is he from his original position.

A) L L R
~~E~~₃₀ N₂₀ ~~W~~₃₀ N₂₀



$\Rightarrow 20 + 20 = 40$ m North (starting position)

6. Kranti moves towards north and covers a distance of 40m then turns right and covers a distance of 50m then turns left and covers 20m, then turns left again and covers 50m. How far and in which direction is he from his reached position.

A) R L L
 N₄₀ ~~E~~₅₀ N₂₀ ~~W~~₅₀

$\Rightarrow 40 + 20 = 60$ m S (Reached position)

7. Dayana drive towards east and covers 30 km, then turns left and covers 50 km, then turns left and covers 30 km, then turns left and covers 50 km, then turns right and covers 40 km and died. How far and in which direction is she from a death position.

A) L L L R
~~E~~₃₀ N₅₀ 30 50 40
~~E~~₃₀ ~~N~~₅₀ ~~W~~₃₀ ~~S~~₅₀ W₄₀

$\Rightarrow 40$ km East (reached position)

Note:-

► Like in above type of problems

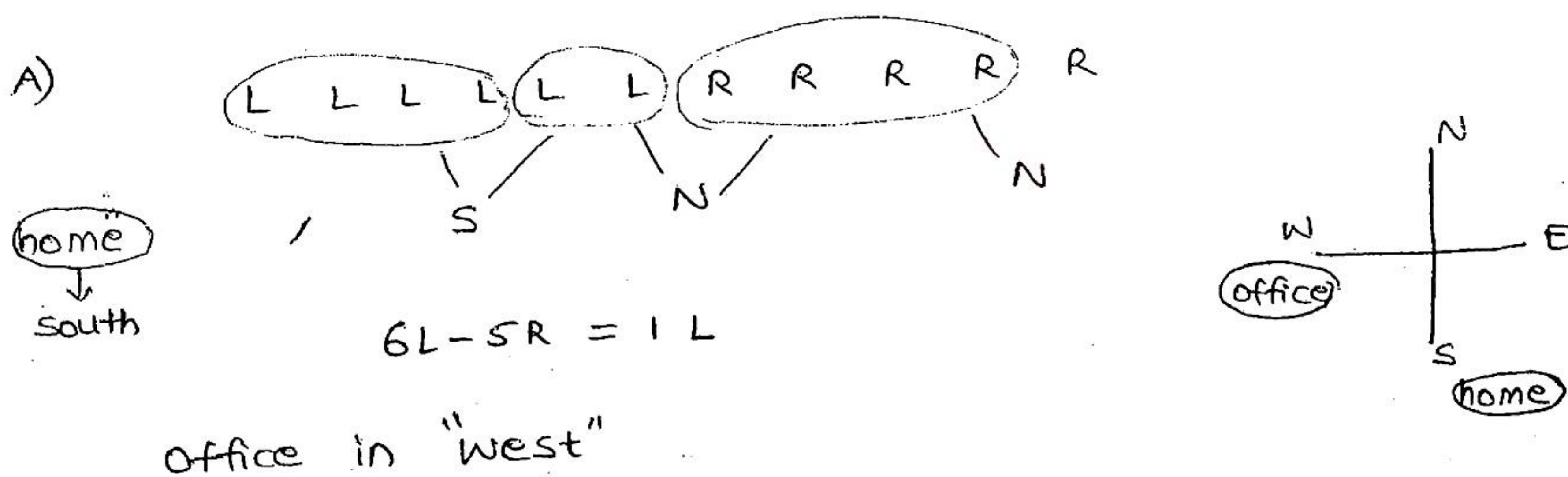
1. If starts from any one 'x' position, both are same positions
 Left - Left (or) Right - Right the next direction is opposite of

2. If starts from any one x -direction, both are different terms Left - Right (or) Right - left, the next direction is same as x -direction.

$x' - \left\{ \begin{array}{c} L-R \\ \text{(or)} \\ R-L \end{array} \right\}$ same as x -direction.

$x - \left\{ \begin{array}{c} L-L \\ \text{or} \\ R-R \end{array} \right\}$ opposite of x -direction.

8. Amar moves to office from his home, he reaches in office after 6 left turns and 5 right turns. If his home is in south then in which direction is his office.



Note:-

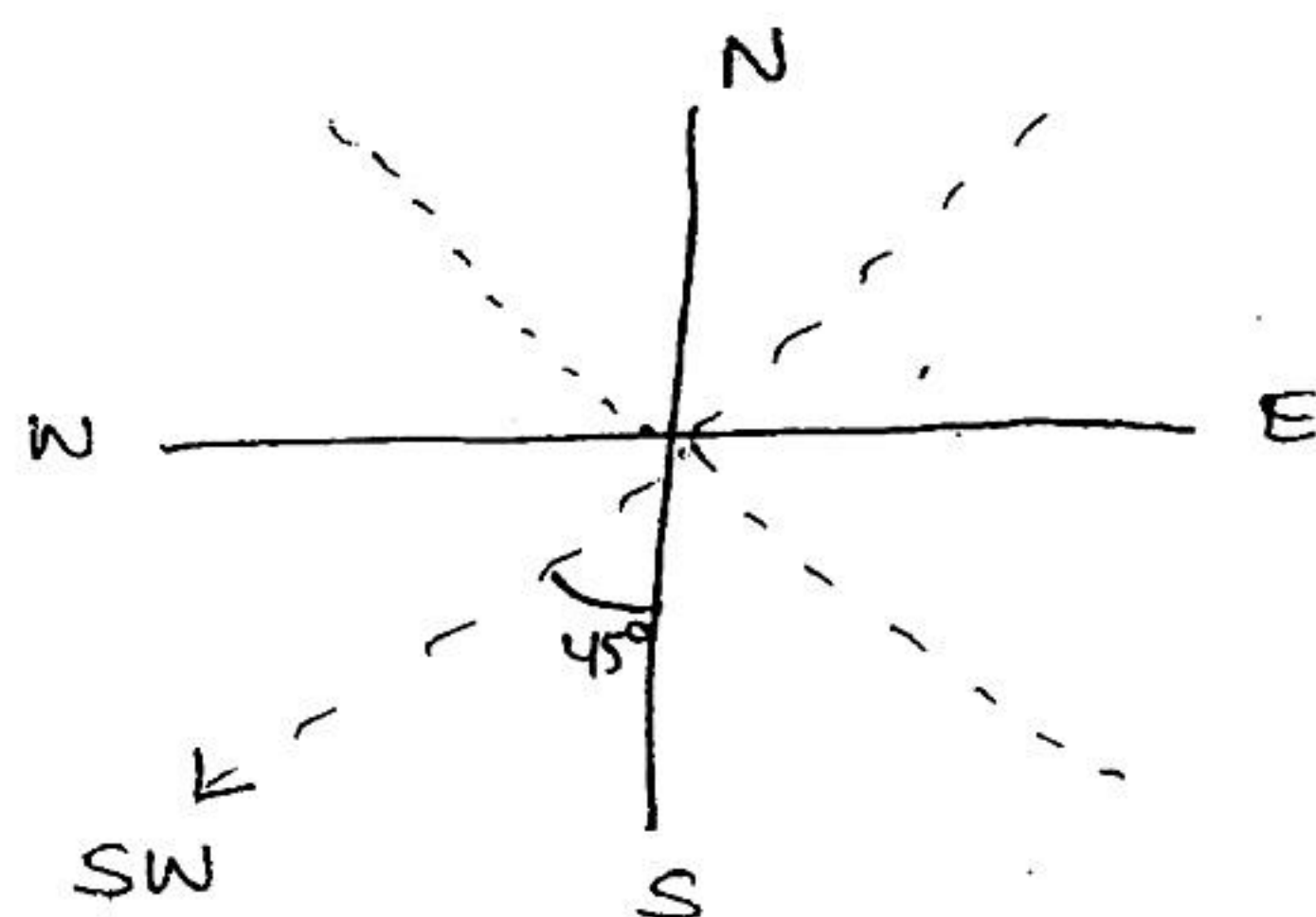
$x' - \left\{ \begin{array}{c} L-L-L-L \\ \text{(or)} \\ R-R-R-R \end{array} \right\}$ - same as x -direction.

1. Right hand turn is clock wise direction.

2. Left hand turn is Anticlock wise direction.

9. I am facing towards south then turns clockwise with an angle of 45° then turns anticlockwise with an angle of 90° they turn clockwise with an angle of 135° , they turn anti c.w with 90° , they turn clock wise with 45° . In which direction I am facing now.

A. C_{45° A_{90° C_{135° A_{90° C_{45°



Add all clockwise

C_{275°

Add all Anticlockwise

A_{180°

$$\Rightarrow C_{275} - A_{180} = 45^\circ$$

$$\Rightarrow C_{45^\circ}$$

$\Rightarrow$ SW

10. Gavini facing towards North east then turns clockwise with an angle of 20° they turns anti clockwise with an angle of 35° they turns clockwise with 30° , they turns anticlockwise with 55° then turns clockwise with 40° . In which direction he facing now.

A) Gavini facing NE

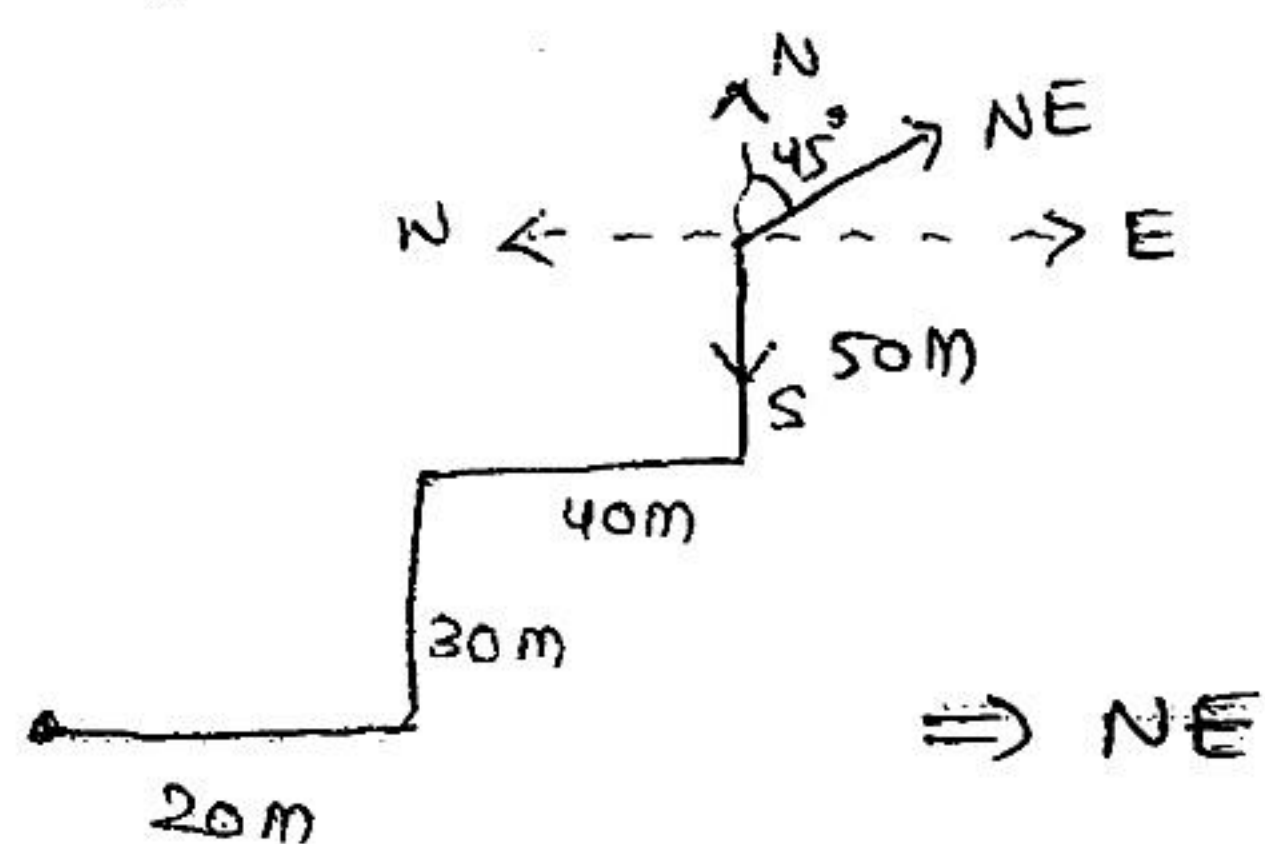
C_{20° A_{35° C_{30° A_{55° A_{40°

$$\Rightarrow C_{90^\circ} \cdot A_{90^\circ}$$

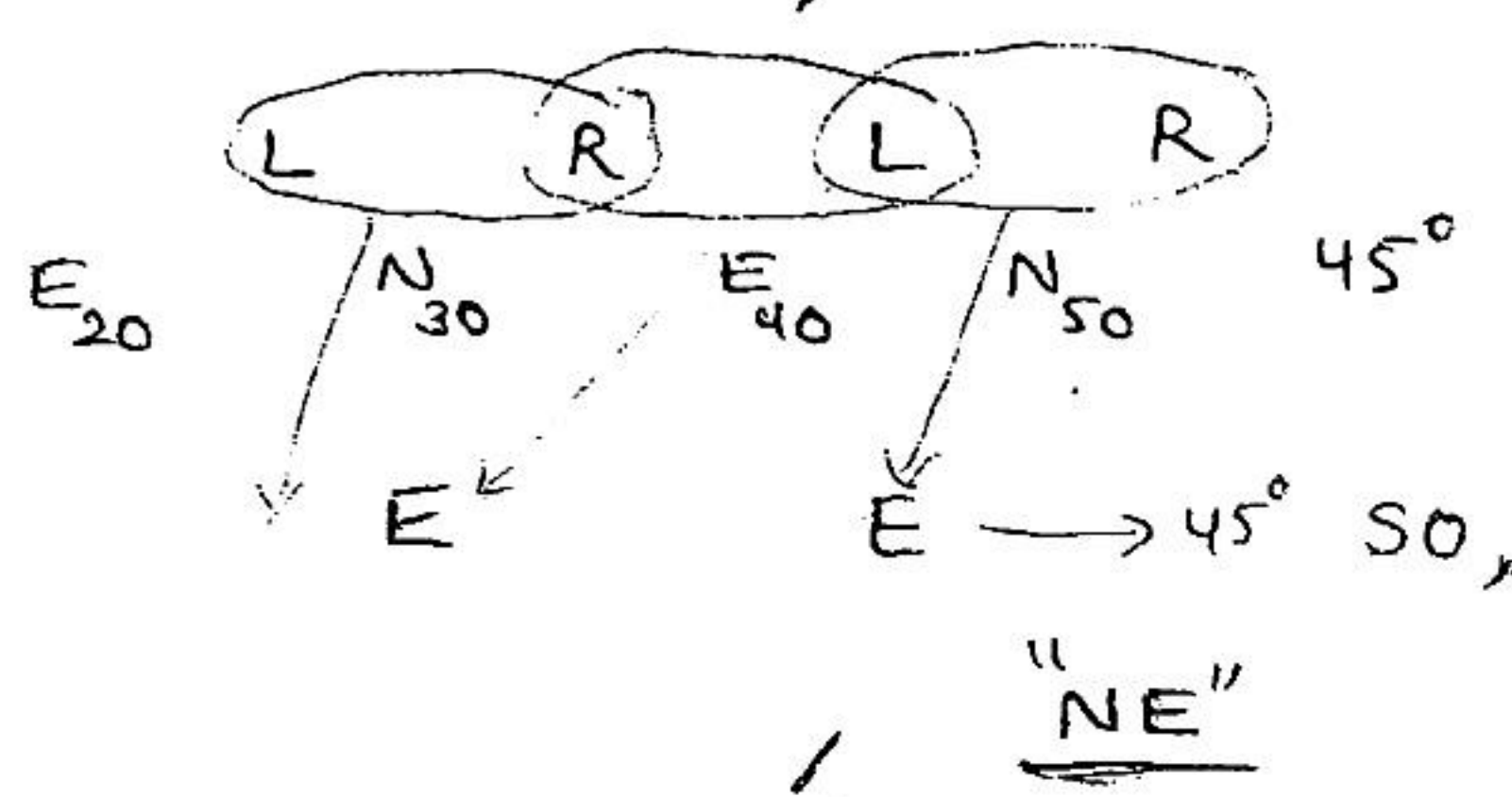
$$\Rightarrow 90 - 90 = 0^\circ \text{ (same direction)}$$

$\Rightarrow$ NE

11. Ravini moves towards east and covers 20m, they turns left 30° and covers 30m, they turns right and covers 40m they turns left and covers 50m, they turns right with an angle of 45° . In which direction he facing now.



$\Rightarrow$ NE

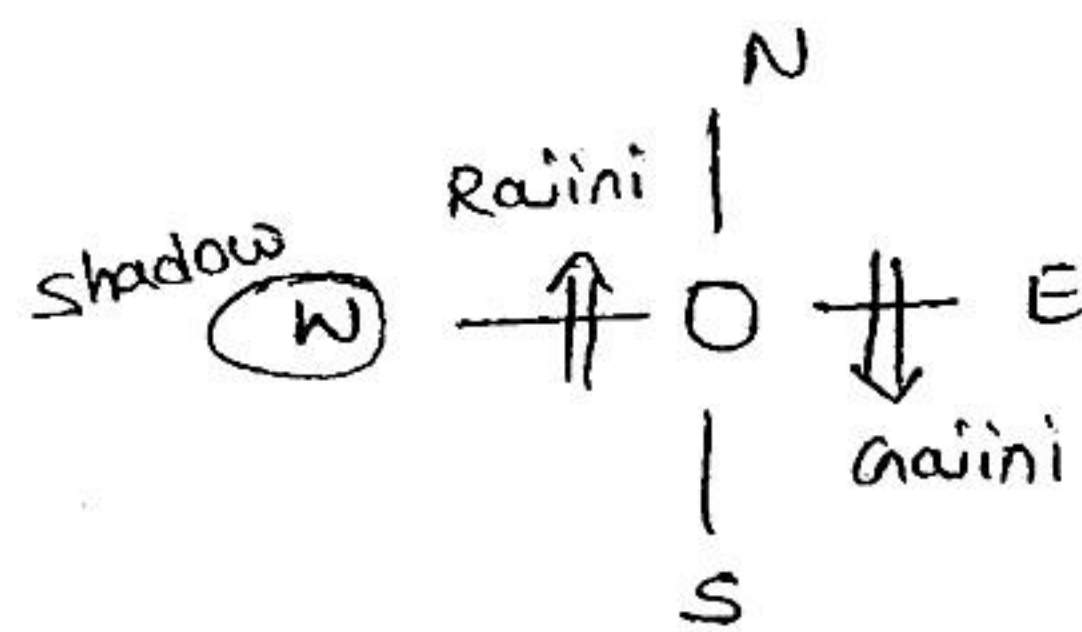


NE

Note:-

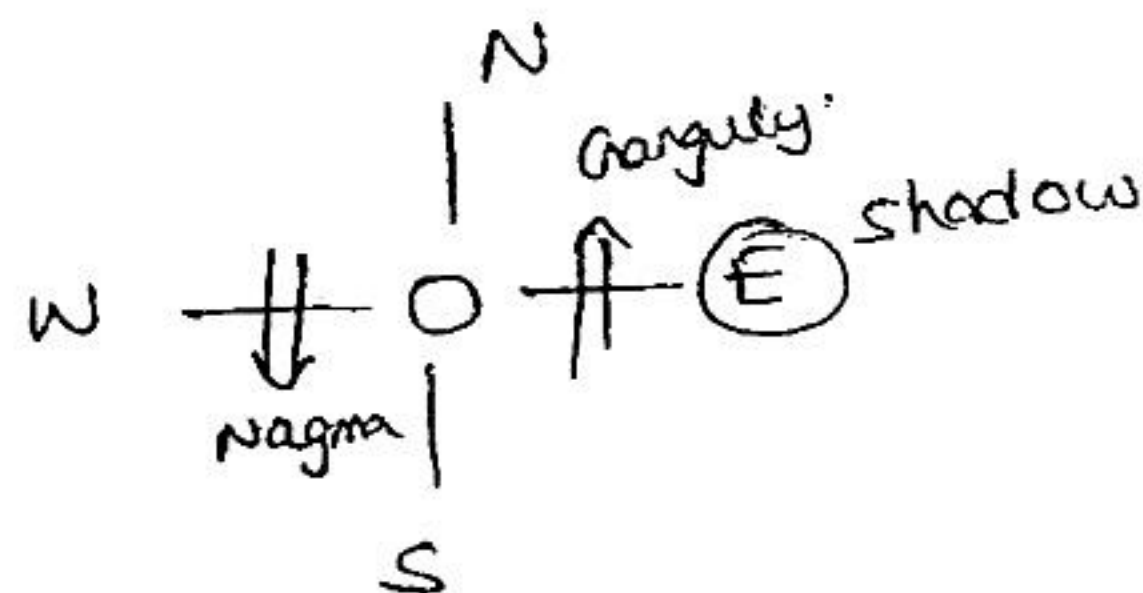
1. In morning hours after sunrise our shadow falls towards west direction.
 2. In evening hours before sunset our shadow falls towards east direction.
12. In one morning hours after sun raise Rajini and Gajini facing to each other and talk, at one cross roads in hyd the shadow of Rajini falls exactly to his left handside. Which direction Gajini was facing now.

A. Gajini facing South



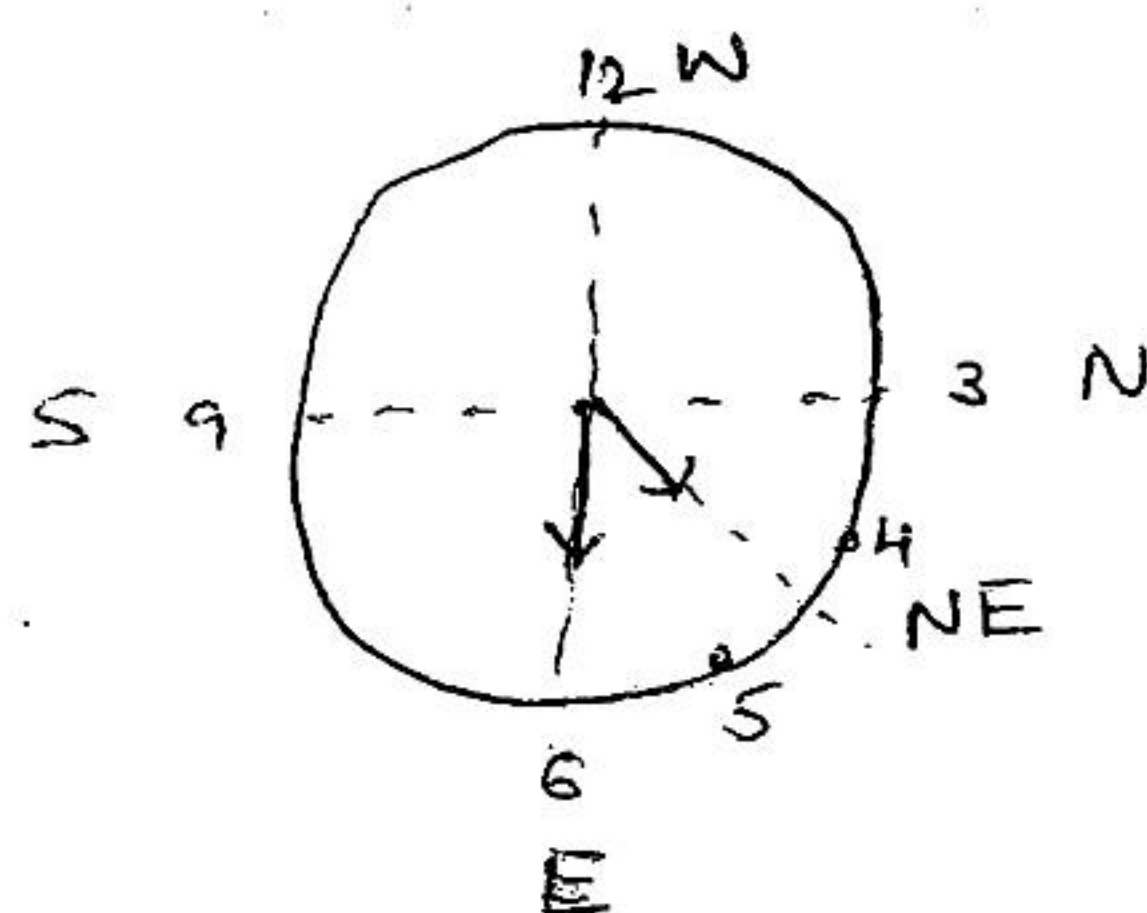
13. In one evening hours before sunsets Nagma and Gunguly are facing to each and talk to each other at one cross roads at Kolkata. The shadow of Nagma falls exactly to right of Gunguly. Then it which direction Nagma was facing now.

A) Nagma facing South.



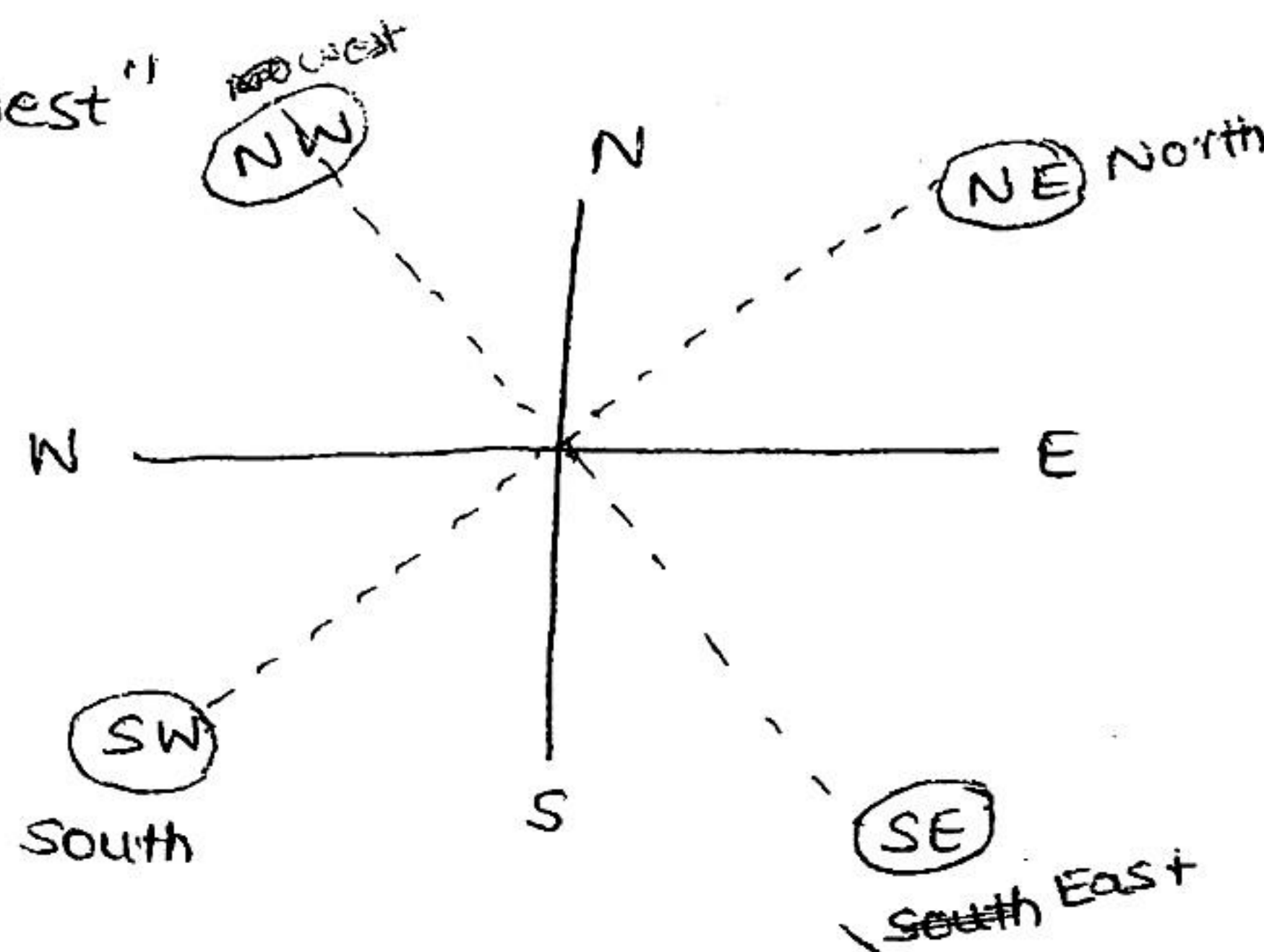
14. A watch reads 4:30 hrs, if minutes hand points towards east then in which direction hours and points now.

A) "NE"



15. If south East is called East, North west is called west, SW is called south and so on. a) Then what / be North called

A) "North west"



NUMBER, TIME SEQUENCE, RANKING AND COMPARISON :- (4-80)

preceeded $\rightarrow$ previous $\rightarrow$ Before $\rightarrow$

preceded by 4 is $3 \rightarrow 34$

Followed $\rightarrow$ After $\rightarrow$ Next

1. How many times 1, 2, 3 are come consequently in which 1 being in the middle and 2 and 3 are either sides of 1.

A. 1 2 3 1 2 2 1 3 3 1 1 2 1 3 1 2 2 1 3 3 1 1 2 2 3 3 4 1 2 3 1 2 3

Ans:- 6 times

2. How many even digits are there in the following sequence which are immediately preceded to even digit products is equal to 1 even number?

A. 4 2 3 4 4 5 4 3 6 4 9 6 7 3 5 4 9 6 7 8 6 4 9 6 7 3 5 4 9 6, 2 7 3 4 9 6

(exc) e (oxo)

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0 - odd

Ans:- cannot be determined.

3. In above sequence how many even no's of are there which are immediately proceeded by two even digit products is subtracting from followed by odd digit product is equal to an odd number.

A) (e-3), 0-2

None.

4. In the following series how many such odd no. are there which are divisible by 3 or by 5, then followed by odd no's and then also followed by even no's.

a) Nil b) 1 c) 2 d) three

A) 12, 19, 21, (3, 25, 18), 35, 20, 22, (21, 45, 46), 47, 48, 9, 50, 52, 54, 55, 56

odd no. odd even = 0 0 0
/ (Divisible by 3 or 5)

5. How many numbers are there from 1 to 150 which are exactly by 7 but not by 3.

a) 4 b) 5 c) 6 d) 7

A) 7, 14, (21), 28, 35, (42), 49

Ans: 5 NO'S

Shortcut:- applicable by for only prime no's i.e., (7, 3) both are prime numbers.

$$\frac{50}{7} = \frac{7 \times 25}{7}$$

$$(7-2) = 5$$

6. How many no. are there from 1 to 50 which are exactly by 7 and also divisible by 3.

A) 7, 14, (21), 28, 35, (42), 49

Ans:- 2 NO'S

7. How many no. are there from 1 to 700 (i) which are $\textcircled{9}$ exactly by 7 but not by 3 (ii) which are exactly divisible by 7 but also by 3.

A) (i) $\frac{700}{7} = \frac{100}{3} = (100 - 33) = 67 \text{ No's}$

(ii) $\frac{700}{7} =$

8. How many no's are there from 1 to 81 which are exact divisible by 9 not by 3.

Ans:- zero

9. How many no's are there from 1 to 81 which are exactly divisible by '3' not by 9

Ans:- 3 6 $\textcircled{9}$ 12 15 $\textcircled{18}$ 21 24 $\textcircled{27}$ 30 33 $\textcircled{36}$ 39 42 $\textcircled{45}$
48 51 $\textcircled{54}$ 57 60 $\textcircled{63}$ 66 69 $\textcircled{72}$ 75 78 $\textcircled{81}$

Total 18 No's

Shortcut:-

1 to 81 by 3 = $\frac{81}{3} = 27$

1 to 81 by 9 = $\frac{81}{9} = 9$ (-)
18

Note:-

Like in above type of problems if anyone is square of another, first divisible with big no. then not divisible with small no. possibility is not present. First divisible with small no. then not divisible with big no's possibility present. Find such possibilities as follows.

10. How many no's are there from 1 to 4000 (i) which are divisible by 4 but not by 2 (ii) which divisible by 2 but not by 4.

A) i) zero

ii) $\frac{4000}{2} = 2000$

$\frac{4000}{4} = 1000$ (-)

1000 - Ans 1000 No's.

11. The numbers from 1 to 85 by which are exactly divisible by 5 are arranged from ascending order from top. Then which no. will be 11th position from top.
- A. 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85

Shortcut:-

For ascending order from top @ $11 \times 5 = 55$

12. In above problems which no. will be is in 11 position from bottom.

A. $\frac{85}{5} = 17, (17 - 11) = 6 + 1 = 7 \times 5 = 35$

Note:-

1. If starts from small no. then required no. is equal to given number of position $\times$ Divisible number.
2. If starts from big number then required number is equal to (Total - Given position) $\times$ Divisible number.

13. In above problem which number will be is in 15th position from bottom.

A. $\frac{85}{5} = 17 \Rightarrow (17 - 15) = (2 + 1) \times 5 = 15.$

14. Mithun was counting down from 32. Sumit was counting upwards the number starting from 1 and he was calling out only the odd no. and what common number will be calling out at same time and same speed.

a) 19 b) 21 c) 22 d) They will not call out the same no.

A) Mithun: 32, 31, 30, 29, 28, 27, 26, 25, 24, 23, 22, 21, 20, 19
Sumit: 1, 3, 5, 7, 11, 13, 15, 17, 19, 21, 23

15. If 1st and 2nd digits in the sequence 5981327438 are interchanged and also 3rd and 4th digits, 5th & 6th digits and so on, which digits will be 7th counting to your left.

A) shortcut:-

7th from right

For odd no. add 1

$7+1=8$ from right

5 9 (8) 1 3 2 7 4 3 8

$\Rightarrow 8$

16. If the position of the 1st and 6th digits of sequence of 8903214675 are interchanged 2 and 7 and so on while no. would be 7th from right end.

a) 2 b) 6 c) 7 d) 8

A) 8 9 0 3 2 1 4 6 7 5
 1 2 3 4 5 6 7 8 9 10

1-6

2-7

3-8

4-9

5-10

7th from right end = 3 it interchanges

from 4 to 9 then 9th letter = 7

17. The letters L, M, N, O, P, Q, R, S, T in their order are substituted by 9 integers 1 to 9 but not in that order. It is ascending. P. The difference b/w P & T is "5". The difference b/w N & T is 3. What is integer assigned to N.

a) 4 b) 5 c) 6 d) 7

A) L to T = 1 to 9 (not in that order)

(i) $P=4$; $(P \sim T) = 5$ i.e., $\left. \begin{matrix} P-T \\ T-P \end{matrix} \right\} = 5$

(ii) $\left. \begin{matrix} N-T \\ T-N \end{matrix} \right\} = 3$

a) $P-T=5 \Rightarrow 4-T=5 \Rightarrow T=-1$ (It is not in 1 to 9)

b) $T-P=5 \Rightarrow T-4=5 \Rightarrow T=9$ (OK)

c) $N-9=3 \Rightarrow N=3+9=12$ (X)

d) $T-N=3 \Rightarrow 9-N=3 \Rightarrow N=6$ (OK)

18. 36 vehicles are parked in a parking ground in a single row. After first car there is 1 scooter, after second car there are 2 scooters. After 3 cars, 3 scooters and so on work out the how many scooters in the 2nd half of the row.

A)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
C ₁	S	C ₂	S	S	C ₃	S	S	S	C ₄	S	S	S	S
15	16	17	18	19	20	21	22	23	24	25	26	27	
C ₅	S	S	S	S	S	C ₆	S	S	S	S	S	S	S
28	29	30	31	32	33	34	35	36					
C ₇	S	S	S	S	S	S	S	C ₈					

Shortcut:-

$$C_1 \ 1 \ C_2 \ 2 \ C_3 \ 3 \ C_4 \ 4 \ C_5 \ 5 \ C_6 \ 6 \ C_7 \ 7 \ C_8$$

(18-3) = 15 No's

$$1 + 1 + 1 + 2 + 1 + 3 + 1 + 4 + 1 + 5 + 1 + 6 + 1 + 7 + 1 = 36$$

$$(18 - 3) = 15 \text{ No's scooters.}$$

↓
3 cars in second half

19. In the following sequence of instructions 1 stands for run, 2 stands for stop and 3 stands for Go, 4 stands for sit, 5 stands for wait the sequence is continued, then which sequence is next.

4 4 5 4 5 3 4 5 3 1 4 5 3 1 2 4 5 4 5 3 4 5 3

a) wait / b) sit c) Go d) Run

A) 4 | 4 5 | 4 5 3 | 4 5 3 1 | 4 5 3 1 2 | 4 5 | 4 5 3 | 4 5 3 1.

↘ is continued

Ans: 1 = run