Direction Sensing

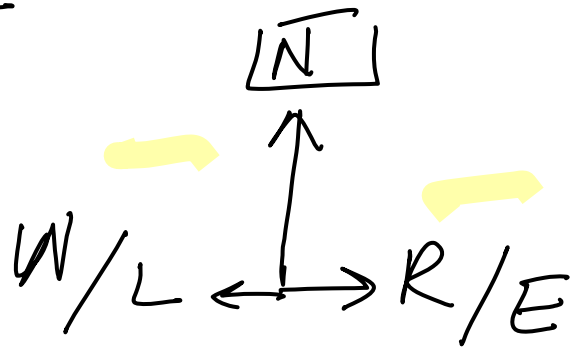
1. In which direction he/she is moving

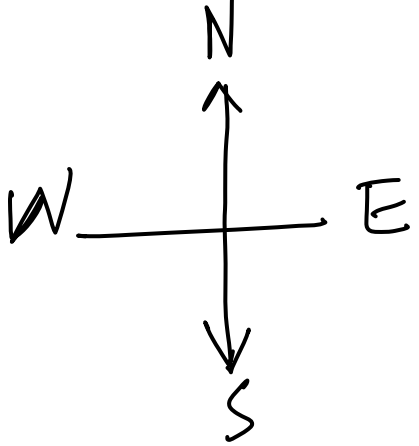
2. In which direction from his initial position:

3. How much distance covered or Total Path travelled.

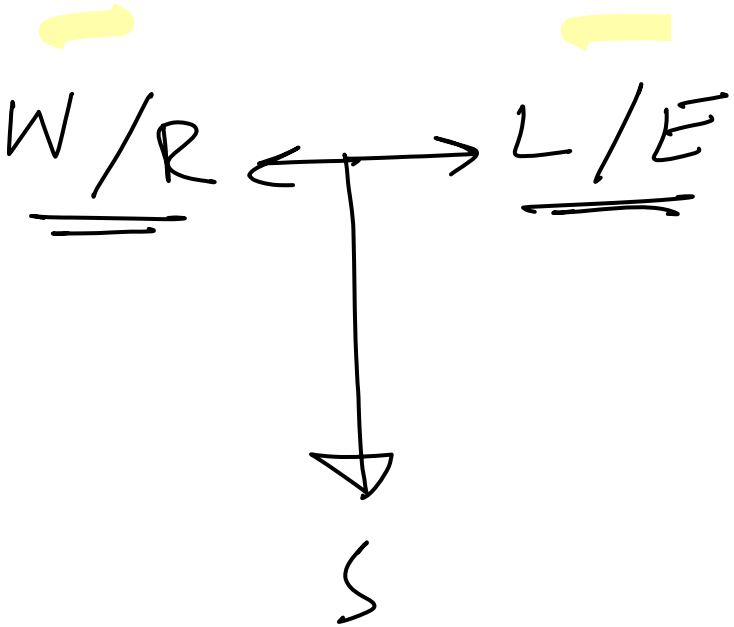
4. How far from his initial point

① Face - North:

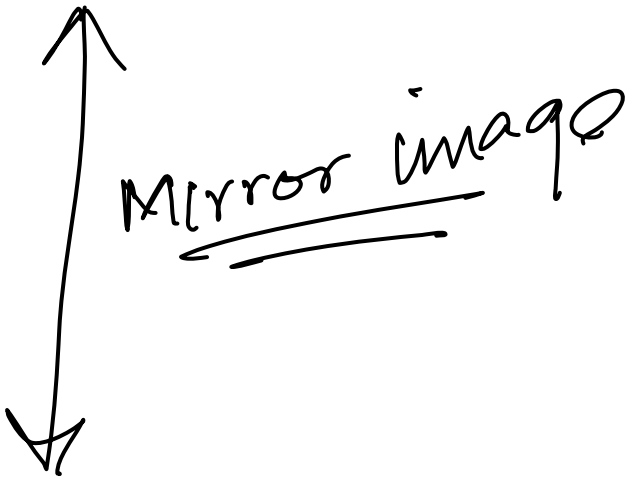


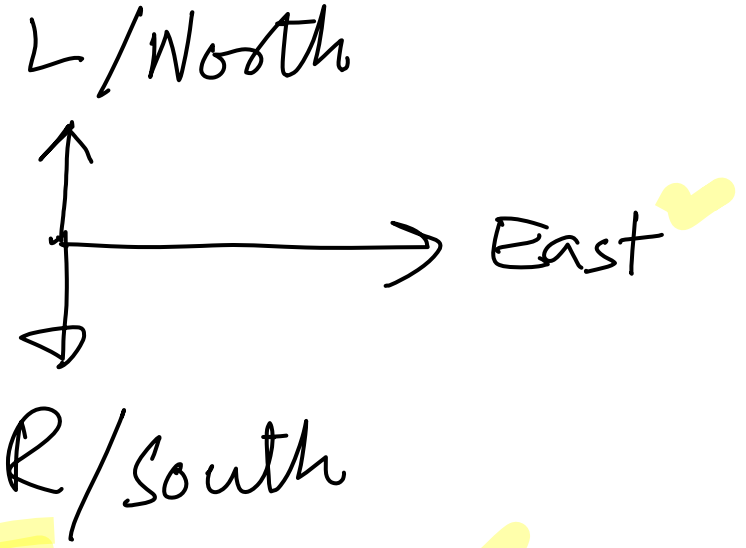


② Face → South

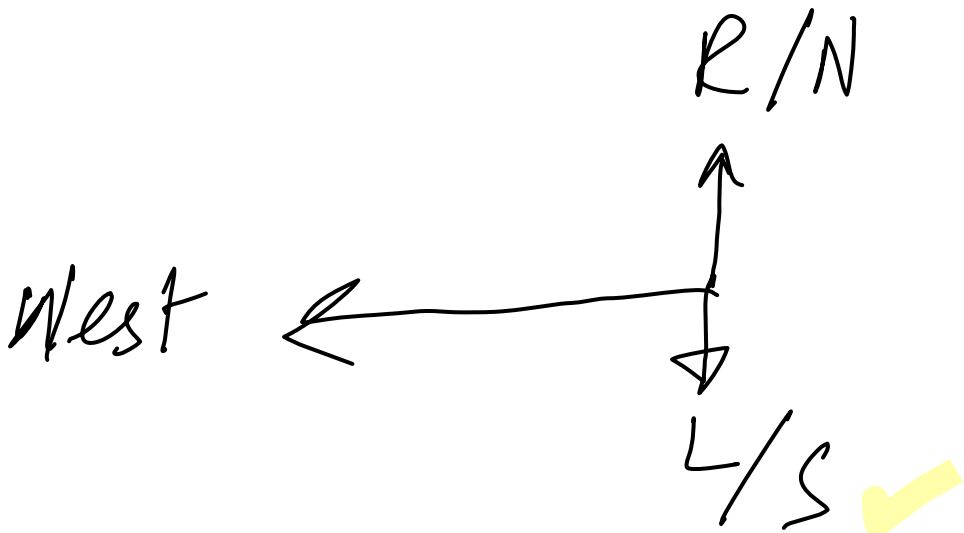


③ Face → East



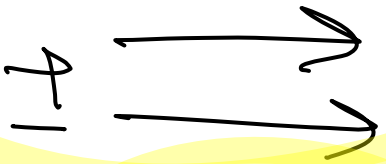


④ Face → West

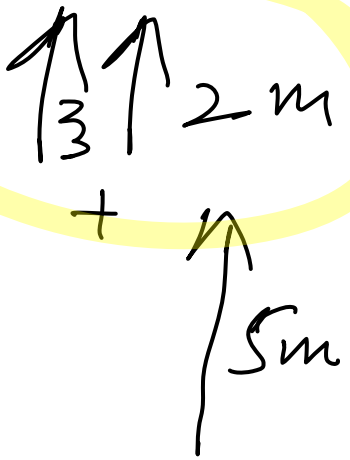


→ Vector Addition / Subtraction :

① Horizontal ± Horizontal

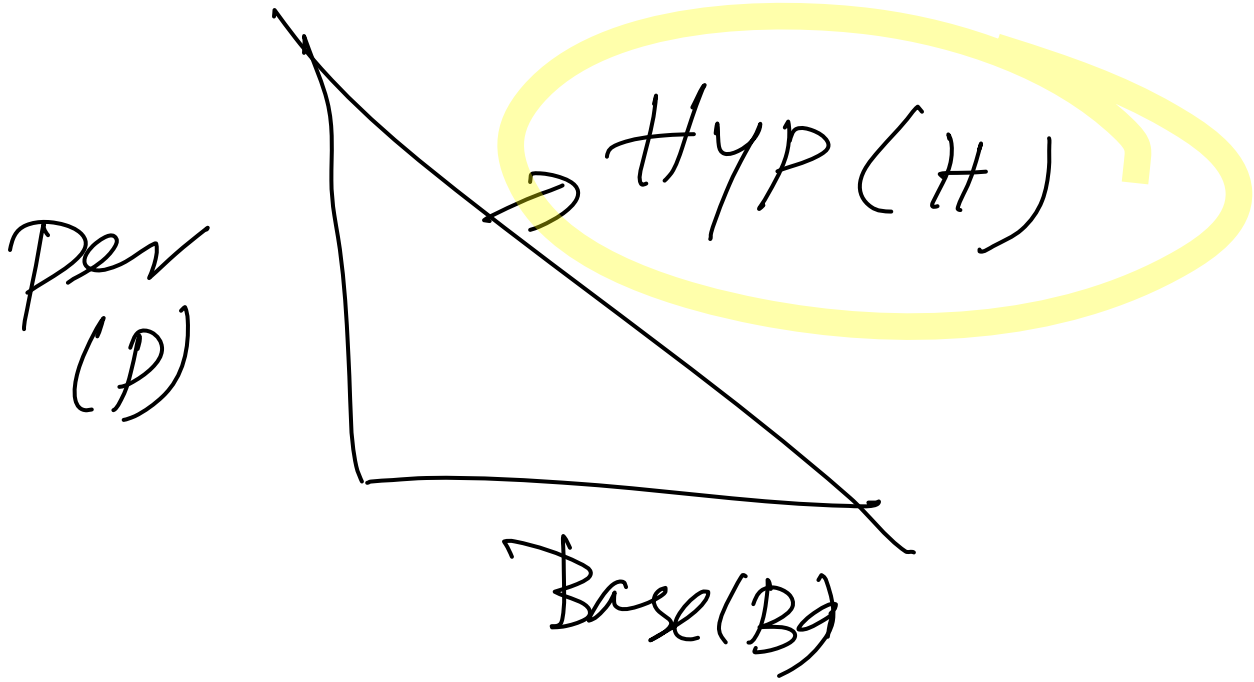


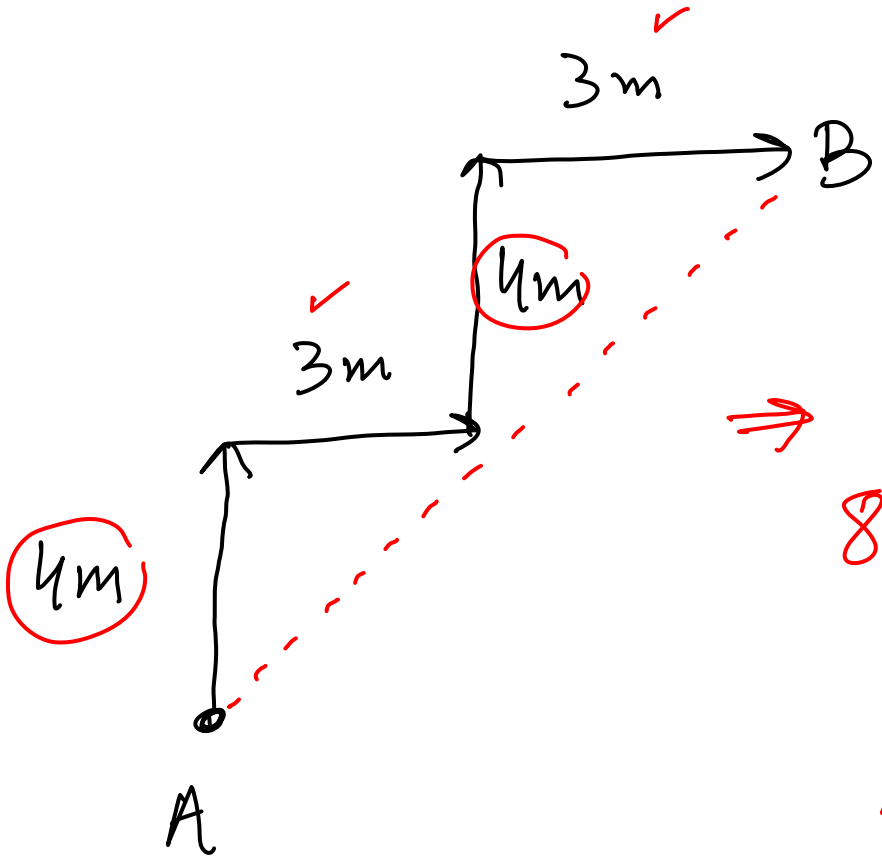
② Vertical ± Vertical

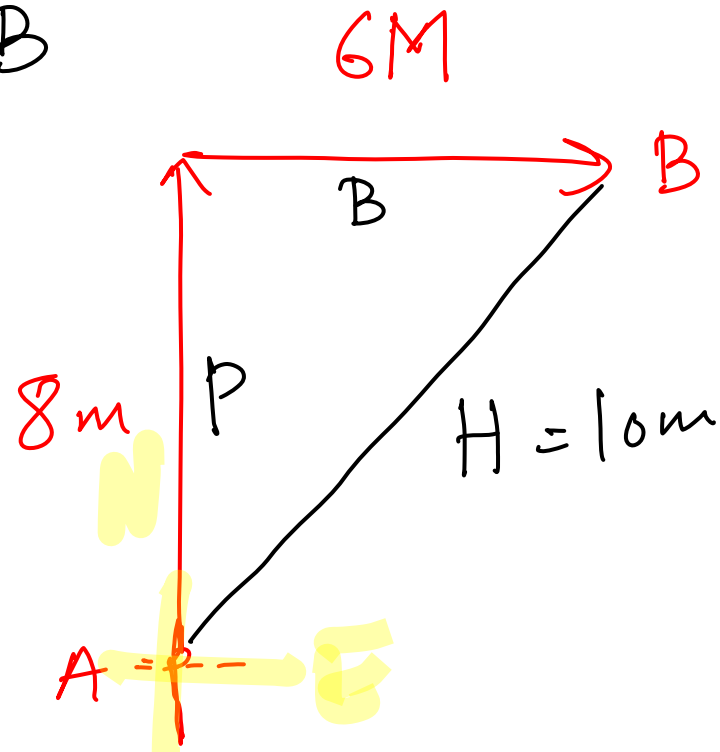


Pythagorus theorem:

$$H^2 = B^2 + P^2$$







① East

② North-East

③ 14m

④ 10m :

$$H^2 = B^2 + P^2$$

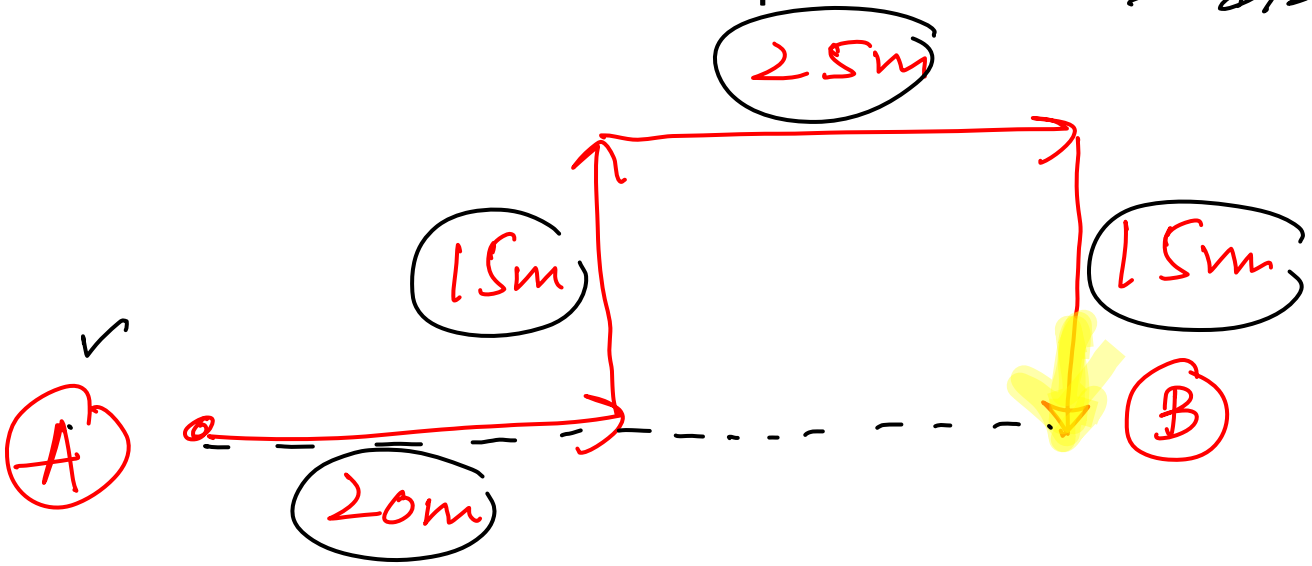
$$H = \sqrt{6^2 + 8^2}$$

$$= \sqrt{36 + 64}$$

$$= \sqrt{100} = 10m$$

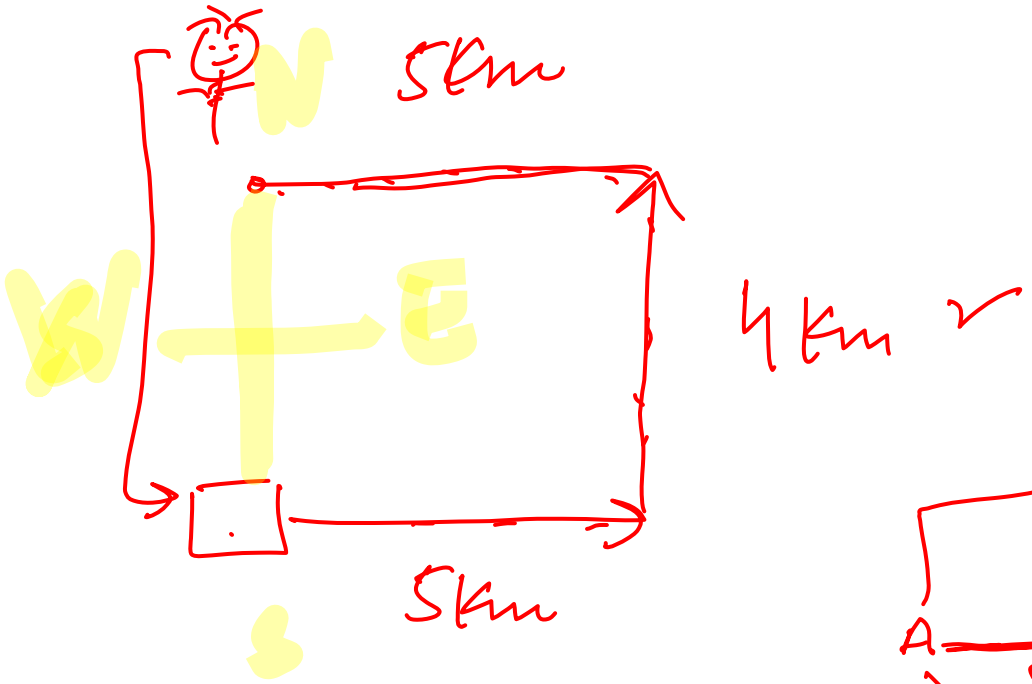
If Rahim moves 20meters in East direction and then turn to his left and then moves 15m and then he turns to his right and moves 25m. After this he turns to his right and moves 15km.

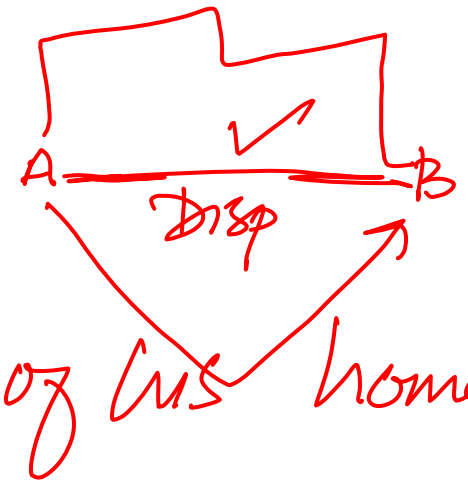
1. In which direction he is moving? → South
2. Total travelling path covered? → 75m
3. How far is he from his initial position? → Displacement 45m.



(4) in which direction from his original position: Ans: East

A man starting from his home walks 5km towards East, and then he turn left and goes 4km. At last he turn to his left and walks 5km. Now find the distance between man and his home and also find in which direction.



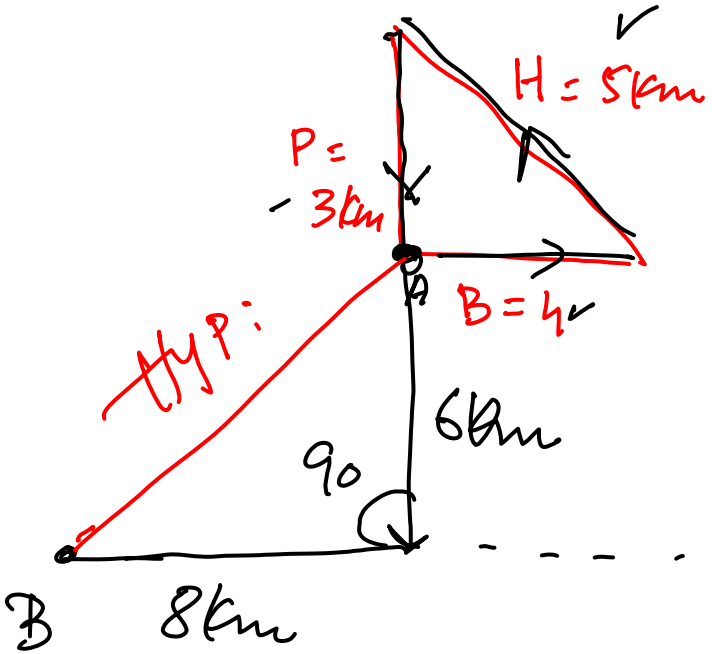


① 4km

② The man is to the North of his home :

1. A man travels over the path of a right-angle triangle having base and hypotenuse 4 and 5 kilometers, respectively. After a complete round he continues in the same direction for 6km and then turns 90degree and continues for another 8km. How long he has travelled and how far he is from his starting point? (CSS-2024)

Ans = 2 & 10 km :



$H^2 = B^2 + P^2$

$P^2 = H^2 - B^2$

$\sqrt{P^2} = \sqrt{5^2 - 4^2}$

$P = \sqrt{25-16}$

$= \sqrt{9}$

$P = 3$ km

$4+5+3+6+8$

$= 26$ km

$H = \sqrt{6^2+8^2} = \sqrt{36+64}$

$= \sqrt{100} = 10$ km

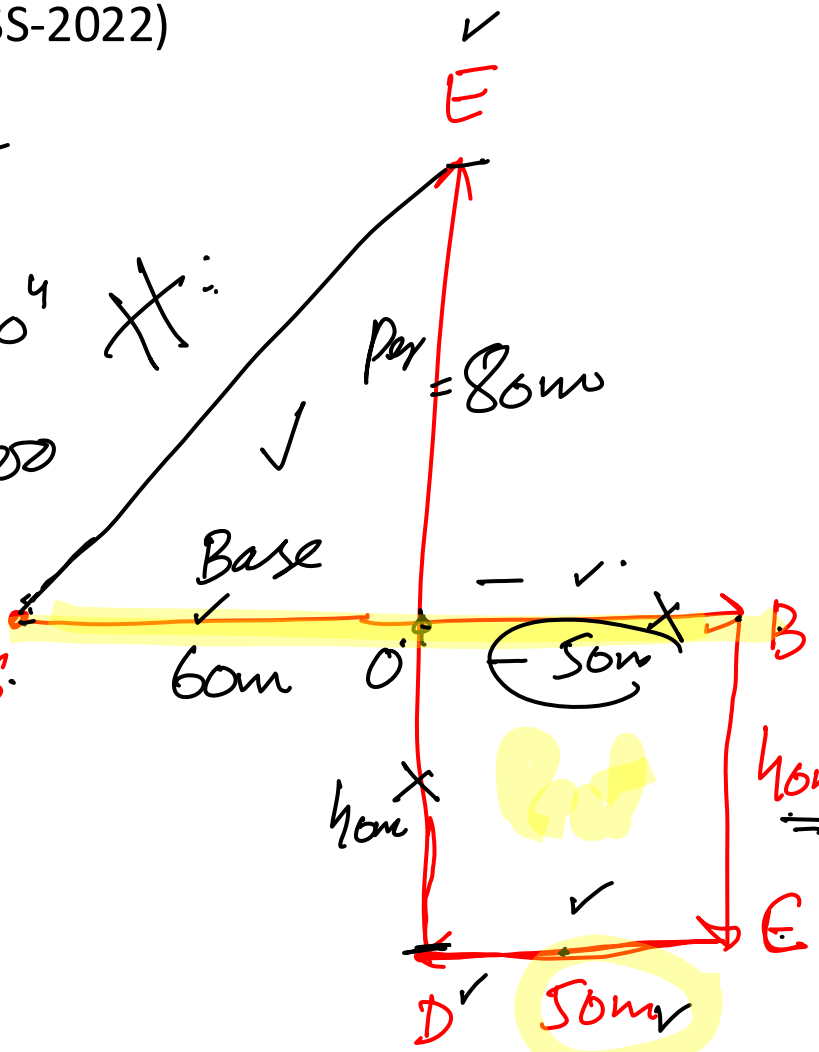
For his morning walk Aslam went 110m towards east from his house and then turned right to keep walking for 40m before turning right again. After continuing to walk for 50meters, he turned right again and kept walking for another 120m, before he sat down on a bench at the park. How far was the bench located from his house? (CSS-2022)

$H^2 = B^2 + P^2$

$= \sqrt{60^2 + 80^4}$

$= \sqrt{10,000}$

$H = 100m$



① S → B = 110m
−50
60

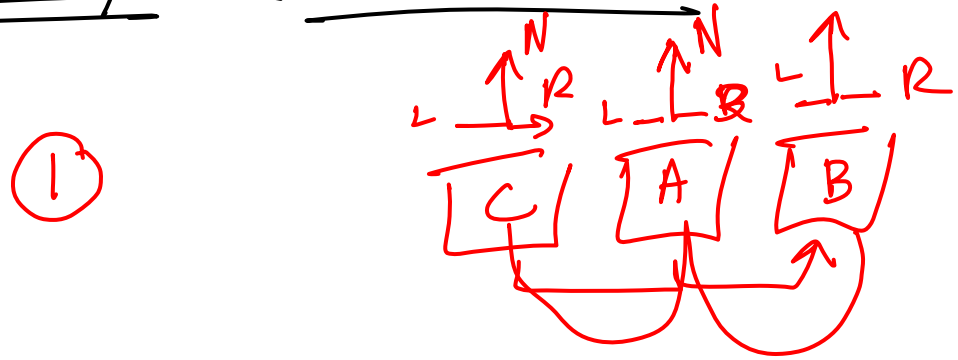
② B → C = 40m

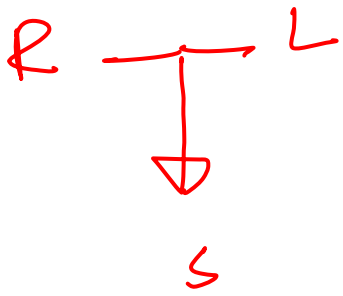
③ C → D = 50m

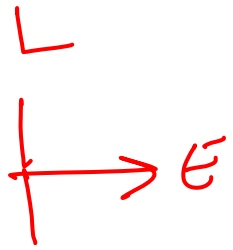
④ D → E = 120m
−40
80m

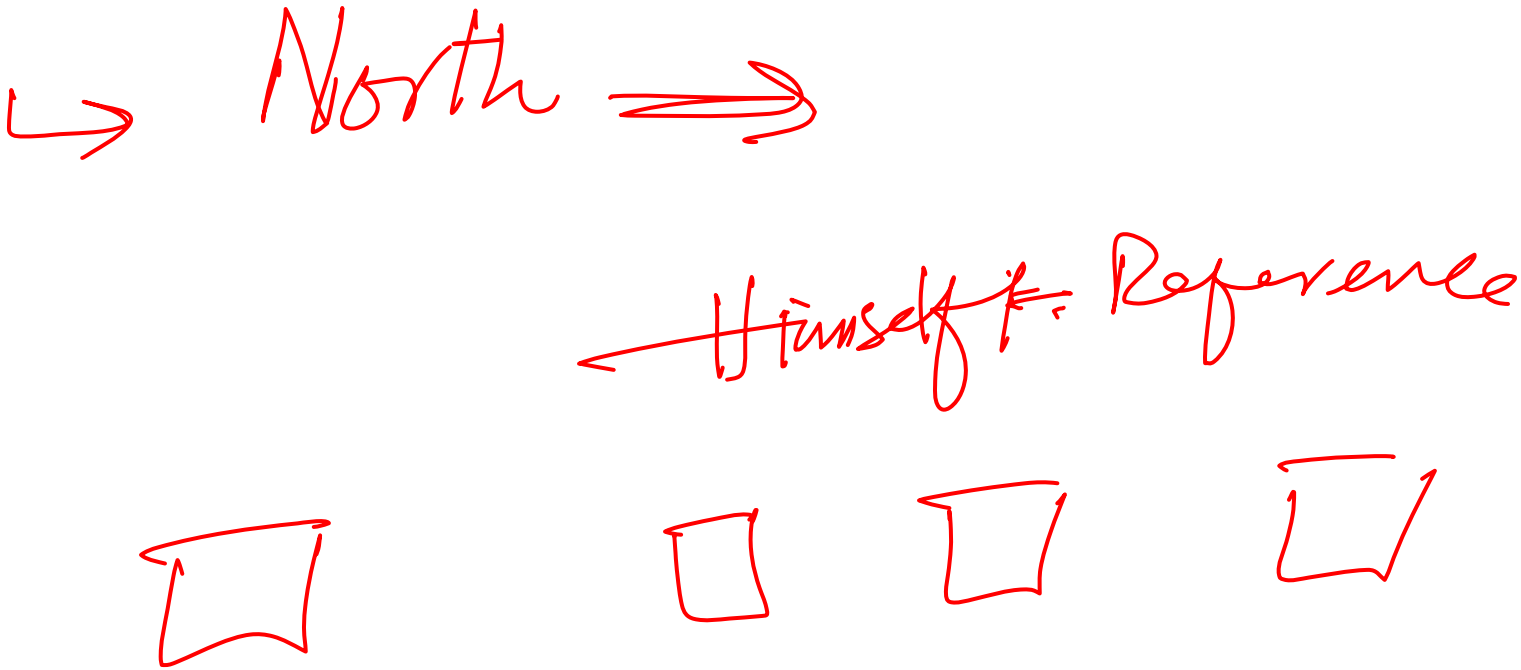
→ Seating arrangement

① Row/straight line :-



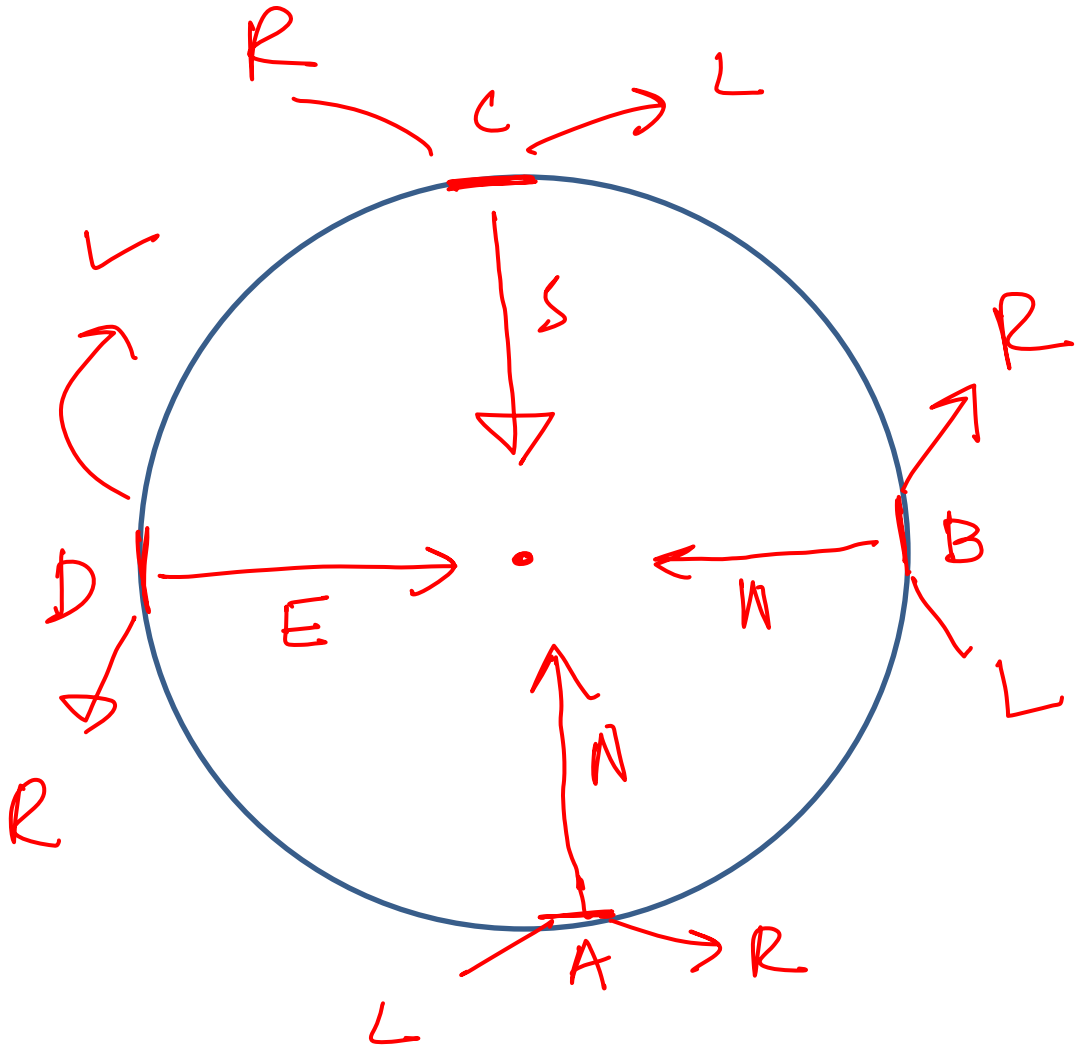




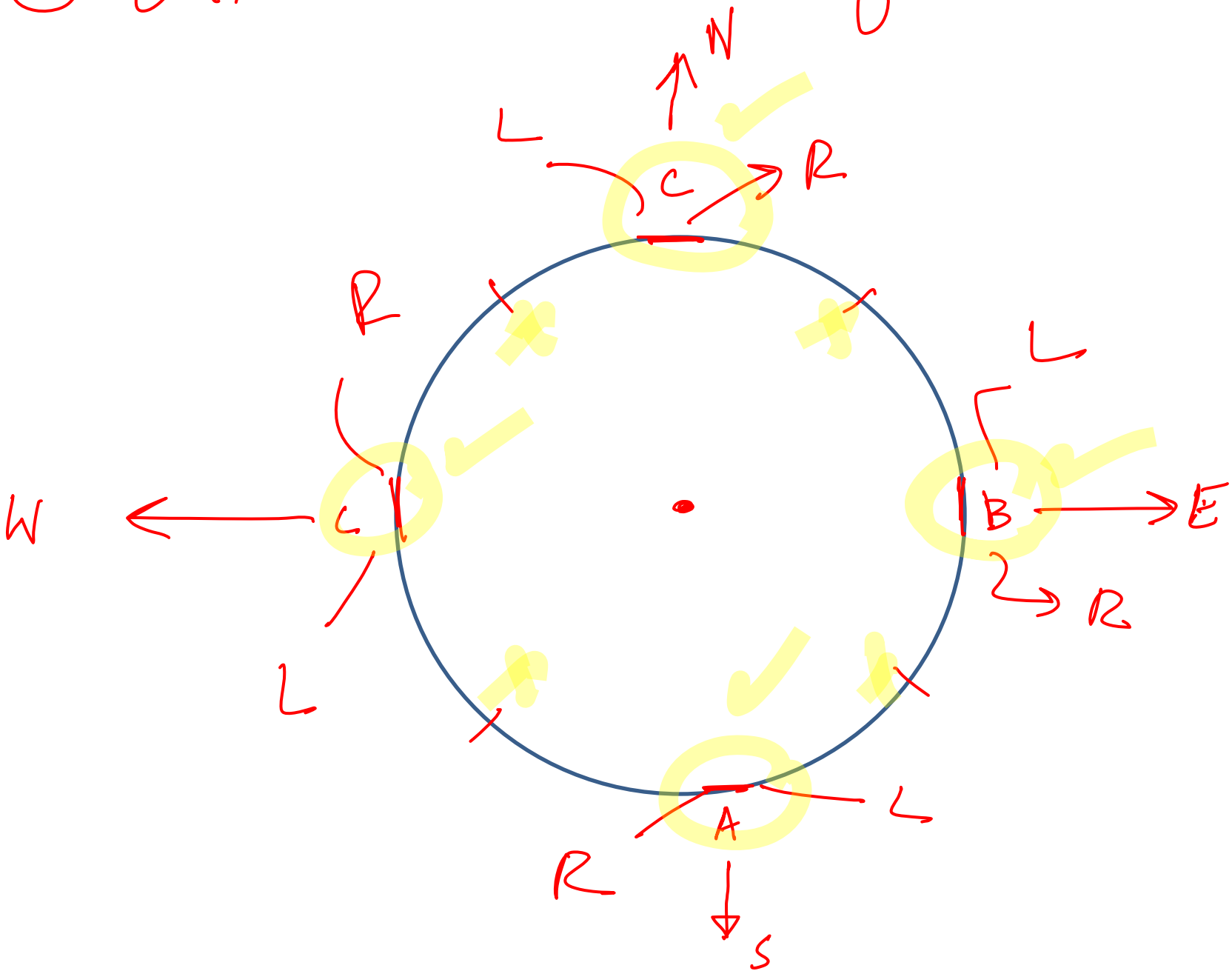

North
Himself i.e. Reference

Circle:

① Face → Towards centre

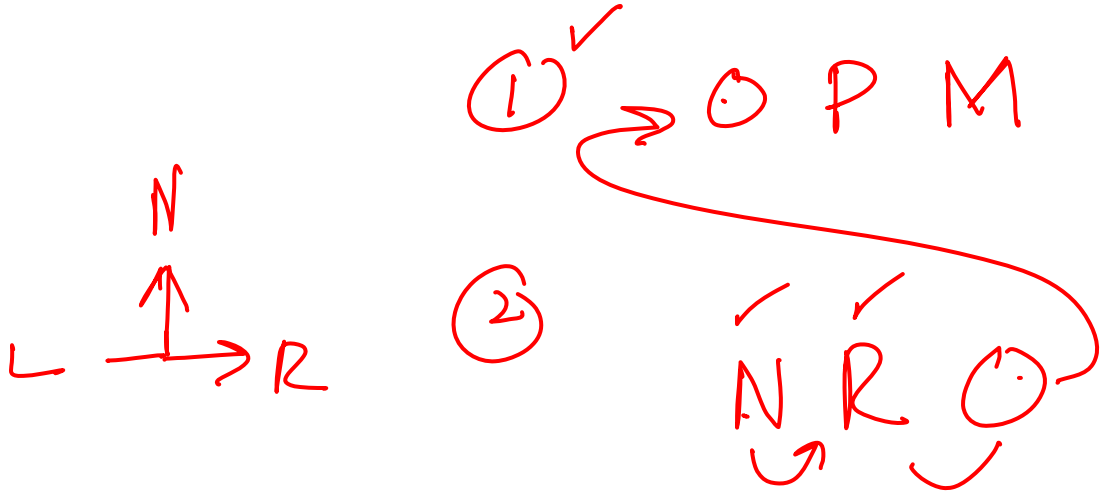


(2) outside → centre → face

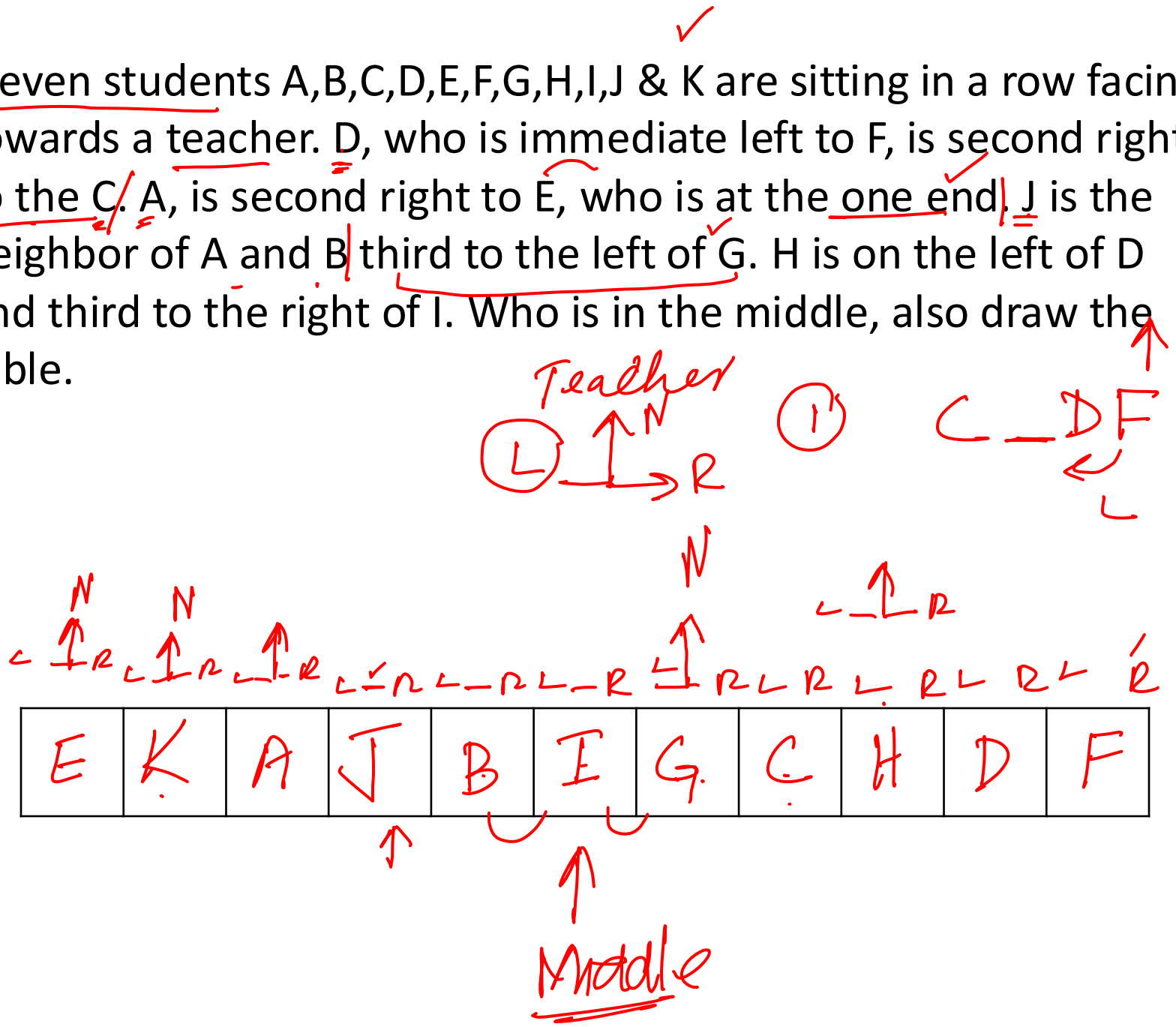


There are five boys sitting in a row in the college party. ‘P’ is sitting to the left of ‘M’ and to the right of ‘O’. ‘R’ is sitting to the right of ‘N’ but left to the ‘O’. Who is sitting in the middle?

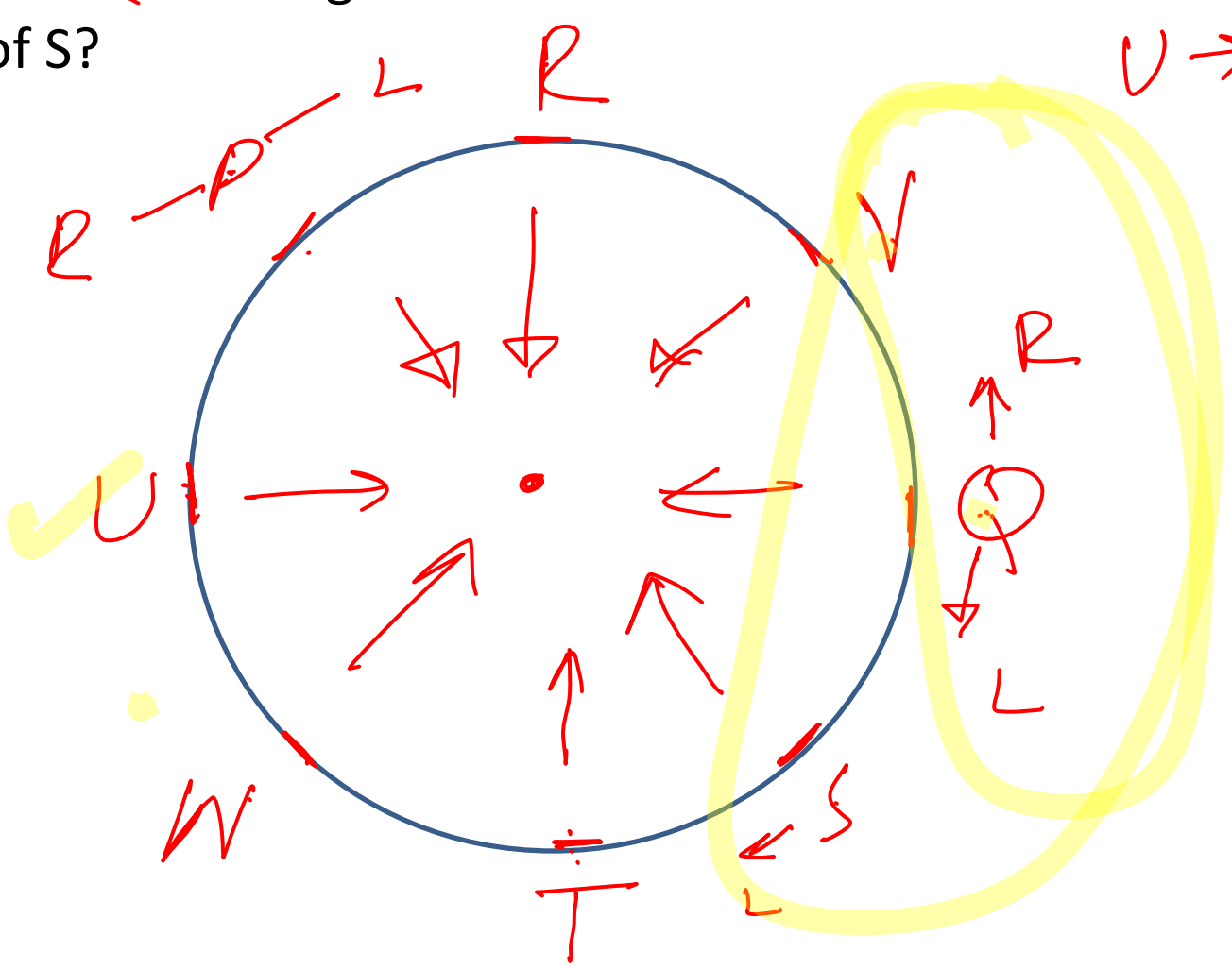
N	R	O	P	M



Eleven students A,B,C,D,E,F,G,H,I,J & K are sitting in a row facing towards a teacher. D, who is immediate left to F, is second right to the C. A, is second right to E, who is at the one end. J is the neighbor of A and B third to the left of G. H is on the left of D and third to the right of I. Who is in the middle, also draw the table.



Eight friends P,Q,R,S,T,U,V & W are sitting on a circular table facing towards centre. Q is between V and S. W is sitting third left to the Q and second right to the P. R is sitting between P and V. Q and T are not sitting in front of each other. Who is at the third left of S?



Five girls A,B,C,D,E and four boys W,X,Y,Z have to go on a trip in three cars. The following restrictions for seating in the car to be observed. 1. Only three persons can sit in one car 2. At least one boy and one girl must be in each car 3. A and D should remain together 4. Z cannot sit with B or C in the same car Distribute boys and girls in three cars (CSS)

(1) Boy

$C_1 =$ A, D, Z

$C_2 =$ B, E, W

$C_3 =$ C, X, Y

(2)

A D W

B C X

E Z Y

If Asif standing in a queue in such a way that He is 6th in the queue from either side, then how many people are standing in the queue?

11 Ans

If five cars are parked bumper to bumper, how many bumper are touching each other?

8 → Ans :

Done :-

Comparison Questions

→ One go (1, 2, 3)

→ Equation formation ① A = 2B

→ Dots connect → linked

→ Proper order / Table

→ Question → Answer.

A,B,C,D,E,F,G and H are eight friends, three of them play cricket and table tennis each and two of them play football. Each one of them has a different height

1. The tallest does not play football and the shortest does not play cricket.
2. F is taller than A and D but shorter than H and B.
3. E who does not play cricket, is taller than B and is 2nd to the tallest.
4. G is shorter than D but taller than A.
5. H, who is 4thfrom the top, play table tennis with D.
6. G doe not play either cricket or football, B does not play football.

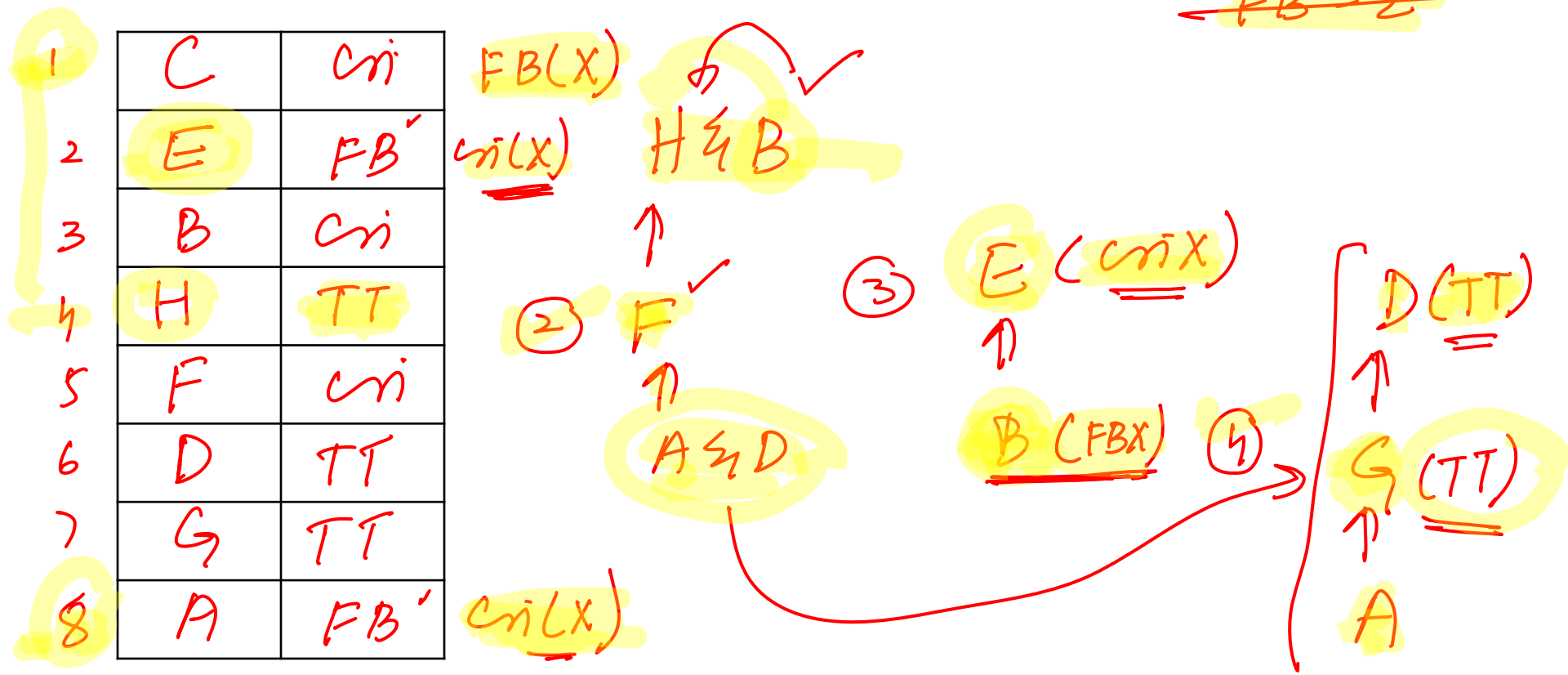
Draw the table in descending order

Cri = 3

TT = 3 - 2 = 1

FB = 2

1	C	Cri
2	E	FB
3	B	Cri
4	H	TT
5	F	Cri
6	D	TT
7	G	TT
8	A	FB



M P E U S

Mushtaq, Pervaiz, Ehsan, Umair and Saleem are friends having different heights and weights. Mushtaq weights four times as much as Pervaiz and Pervaiz weight double than Ehsan. Ehsan weights half as much as Umair and Umair weight half as much as Saleem.

1. Who is the heaviest among them → Mushtaq :
2. Who is the 2nd heaviest? → Saleem :
3. Who has the lowest weight? Ehsan :
4. who are equal in weights? P & U
5. Mention the descending order (CSS) M > S > P = U > E

① $M = 4P$

② $P = 2E$

③ $E = \frac{1}{2} U$

④ $U = \frac{1}{2} S$

M
S
P = U
E

let, $P = 20\,kg$

① $M = 4P \Rightarrow M = 4 \times 20 = 80\,kg$.

② $P = 2E \rightarrow E = P/2 \Rightarrow E = \frac{20}{2} = 10\,kg$.

③ $E = \frac{1}{2}U \rightarrow U = 2E \Rightarrow U = 2 \times 10 = 20\,kg$

④ $U = \frac{1}{2}S \rightarrow S = 2U \rightarrow S = 2 \times 20 = 40\,kg$.

Differentiate with examples between a “Pictogram” and “Histogram”.

(B) The teachers of a certain school were asked to indicate the average number of hours they spend on marking students assignments each day. The following set
of data was obtained
6 4 3 1 2 2 3 1 4
1 2 5 3 4 5 2 2 3
3 1 2 2 3 1 4 2
Construct a frequency table and draw a Histogram illustrating the results.
(C) How many teachers responded to the survey?
(D) What the longest number of hours and most common number of hours are
spent?