

# Reasoning

## Direction & Distance

### Level-2

**Q1 Directions :** Study the data carefully and answer the questions accordingly.

The distance between N and Q is 15m. Point H is 40m west of point Q. Point V is in 10m north of N and 20m east of point S. Points H, N, and Q are in a single line. Point L is 15m north of point Q and 20m east of point T. Point L is not in the north-west of point N.

What is the distance between the points H and N?

- (A) 25m (B) 15m  
(C) 30m (D) 40m  
(E) 45m

**Q2 Directions :** Study the data carefully and answer the questions accordingly.

The distance between N and Q is 15m. Point H is 40m west of point Q. Point V is in 10m north of N and 20m east of point S. Points H, N, and Q are in a single line. Point L is 15m north of point Q and 20m east of point T. Point L is not in the north-west of point N.

Which of the followings points is/are in the north-west of point N?

- (A) T (B) L  
(C) S (D) Both T and S  
(E) N

**Q3 Directions:** A family has five members viz. Q, R, S, T, and U, whose relations are given in a coded language. Either both or none of the parents of a person are alive. The family members are also standing on the ground at a certain distance from each other. The respective position of a person with respect to another is also given in coded language. Study the following information and answer the questions.

U is the husband of Q. No one in the family has more than two children.

$A \wedge B$  means A is the father of B and stands to the east of B.

$A * B$  means A is the daughter of B.

$A \# B$  means A stands to the north of B.

$A ? B$  means A stands to the south of B.

$A = B$  means A stands to the west of B.

Example:  $A(24) \wedge B$ , means A is the father of B and A has two children. A stands 12 m to the east of B.

$A(9) ? B$ , means A stands 9 m south of B.

$A(10) ? B$ , means A stands 10 m south of B.

$A(8) = B$ , means A stands 8 m west of B.

$R(24) \wedge Q(10) ? U(12) = S$ .

$U(7) ? T * R$ .

U is standing to the \_\_\_\_\_ of R.

- (A) North-west (B) South  
(C) South-east (D) North-east  
(E) None of these

**Q4 Directions:** A family has five members viz. Q, R, S, T, and U, whose relations are given in a coded language. Either both or none of the parents of a person are alive. The family members are also standing on the ground at a certain distance from each other. The respective position of a person with respect to another is also given in coded language. Study the following information and answer the questions.

U is the husband of Q. No one in the family has more than two children.

$A \wedge B$  means A is the father of B and stands to the east of B.

$A * B$  means A is the daughter of B.

$A \# B$  means A stands to the north of B.



A ? B means A stands to the south of B.

A = B means A stands to the west of B.

Example: A(24) ^ B, means A is the father of B and A has two children. A stands 12 m to the east of B.

A(9) ? B, means A stands 9 m south of B.

A(10) ? B, means A stands 10 m south of B.

A(8) = B, means A stands 8 m west of B.

R(24) ^ Q(10) ? U(12) = S.

U(7) ? T \* R.

What is the approximate shortest distance between S and T ?

- (A) 12 m (B) 18 m  
(C) 14 m (D) 16 m  
(E) None of these

**Q5** Directions: A family has five members viz. Q, R, S, T, and U, whose relations are given in a coded language. Either both or none of the parents of a person are alive. The family members are also standing on the ground at a certain distance from each other. The respective position of a person with respect to another is also given in coded language. Study the following information and answer the questions.

U is the husband of Q. No one in the family has more than two children.

A ^ B means A is the father of B and stands to the east of B.

A \* B means A is the daughter of B.

A # B means A stands to the north of B.

A ? B means A stands to the south of B.

A = B means A stands to the west of B.

Example: A(24) ^ B, means A is the father of B and A has two children. A stands 12 m to the east of B.

A(9) ? B, means A stands 9 m south of B.

A(10) ? B, means A stands 10 m south of B.

A(8) = B, means A stands 8 m west of B.

R(24) ^ Q(10) ? U(12) = S.

U(7) ? T \* R.

Who among the following is the female member of the family ?

I. S

II. U

III. T

(A) Only I

(B) Only II

(C) Both I and II

(D) Both II and III

(E) Both I and III

**Q6** Directions: A family has five members viz. Q, R, S, T, and U, whose relations are given in a coded language. Either both or none of the parents of a person are alive. The family members are also standing on the ground at a certain distance from each other. The respective position of a person with respect to another is also given in coded language. Study the following information and answer the questions.

U is the husband of Q. No one in the family has more than two children.

A ^ B means A is the father of B and stands to the east of B.

A \* B means A is the daughter of B.

A # B means A stands to the north of B.

A ? B means A stands to the south of B.

A = B means A stands to the west of B.

Example: A(24) ^ B, means A is the father of B and A has two children. A stands 12 m to the east of B.

A(9) ? B, means A stands 9 m south of B.

A(10) ? B, means A stands 10 m south of B.

A(8) = B, means A stands 8 m west of B.

R(24) ^ Q(10) ? U(12) = S.

U(7) ? T \* R.

Who is the mother-in-law of the one standing to the west of S ?

(A) P (B) R

(C) T (D) S

(E) Cant determine

**Q7** Directions: Study the following data carefully and answer the questions accordingly.



Rahul starts from point A and moves 6m to the west to reach point B. From point B, he takes a left turn and moves 4m to reach point C. Then, from point C, he takes right turn and moves 8m to reach point D. From point D, he takes right turn and moves 12m to reach point E. Finally, from point E, he takes a right turn again and moves 8m to reach point F.

What is the direction of point E with respect to point C?

- (A) South (B) South east  
(C) North west (D) South west  
(E) None of these

**Q8 Directions: Study the following data carefully and answer the questions accordingly.**

Rahul starts from point A and moves 6m to the west to reach point B. From point B, he takes a left turn and moves 4m to reach point C. Then, from point C, he takes right turn and moves 8m to reach point D. From point D, he takes right turn and moves 12m to reach point E. Finally, from point E, he takes right turn again and moves 8m to reach point F.

What is the direction of point A with respect to point D?

- (A) Southwest (B) Northeast  
(C) Northwest (D) Southeast  
(E) None of these

**Q9 Study the following information carefully and answer the questions accordingly.**

Raj moves 20m towards the north from point D to reach point E. From point E, he takes right turn and moves 15m to point F. From point F, he takes right turn and moves 8m to point G then from point G he takes a U-Turn and moves 18m to point H. Now from point H he takes a right turn and moves 15m to reach the point I.

What is the shortest distance between point D and point F?

- (A) 15 (B) 30

- (C) 25 (D) 20  
(E) None of these

**Q10 Study the following information carefully and answer the questions accordingly.**

Raj moves 20m towards the north from point D to reach point E. From point E, he takes right turn and moves 15m to point F. From point F, he takes right turn and moves 8m to point G then from point G he takes a U-Turn and moves 18m to point H. Now from point H he takes right turn and moves 15m to reach the point I.

What is the direction of point E with respect to the point I?

- (A) North East (B) South West  
(C) North West (D) South  
(E) None of these

**Q11 Study the following information carefully and answer the questions accordingly.**

Raj moves 20m towards the north from point D to reach point E. From point E, he takes right turn and moves 15m to point F. From point F, he takes right turn and moves 8m to point G then from point G he takes a U-Turn and moves 18m to point H. Now from point H he takes right turn and moves 15m to reach the point I.

What is the direction of point H with respect to point D?

- (A) North East (B) South  
(C) West (D) South west  
(E) None of these

**Q12 Directions: Study the following data carefully and answer the questions accordingly.**

Raj starts from point A, towards the 10m east direction then he takes left from point B and moves 6m to reach point C. From point C, he takes left again and moves 10m to reach point D. Finally, from point D, he takes right and moves 5m to reach the Mall.



What is the direction of the mall with respect to point B?

- (A) South (B) Northwest  
(C) Southeast (D) Northeast  
(E) None of these

**Q13 Directions: Study the following data carefully and answer the questions accordingly.**

Richa starts her journey from college, she moves toward her west direction and covers a 10m distance to reach the coffee shop. From the coffee shop, she took a right turn to reach the park after covering 8m and then she again took a right turn and walked 10 m to reach SBI. From SBI she took a left turn and covered 7m to reach the market and then she took a right to reach home after covering 5m.

What is the total distance covered by her?

- (A) 30m (B) 50m  
(C) 40m (D) 60m  
(E) None of these

**Q14 Directions: Study the following data carefully and answer the questions accordingly.**

Richa starts her journey from college, she moves toward her west direction and covers a 10m distance to reach the coffee shop. From the coffee shop, she took a right turn to reach the park after covering 8m and then she again took a right turn and walks 10m to reach SBI. From SBI she took a left turn and covered 7m to reach the market and then she took a right to reach home after covering 5m.

What is the direction of her home with respect to her college?

- (A) North (B) North- East  
(C) South- West (D) West  
(E) None of these

**Q15 Directions: Study the following data carefully and answer the questions accordingly.**

Riddhi starts walking from her home to the tuition classes. She walks 4m from her home in the south direction and reaches the stationary shop. She buys a notebook, takes a left turn and

walk for 6m in the same direction to reach an ice-cream shop. She buys an ice-cream and takes a right turn. She walks 8m in the same direction till MG Road and takes a right turn. She walks for 10m in the same direction to reach her tuition.

What is the direction of Home with respect to the MG Road?

- (A) South east (B) North  
(C) North west (D) East  
(E) None of these

**Q16 Directions: Study the following data carefully and answer the questions accordingly.**

Rishabh moves 8m towards the South from point V to reach point P. From point P, he takes right turn and moves 4m to point Q. Then he takes a left turn and moves 4m to reach point R and then he takes a left turn and moves 5m to reach point S. From point S, he takes a right turn and moves 7m to reach point T.

What is the direction of point T with respect to point P?

- (A) South (B) Northwest  
(C) Southeast (D) North  
(E) None of these

**Q17 Directions: Study the following data carefully and answer the questions accordingly.**

Rishav is going to a coffee shop. He starts walking in the west direction. After walking a distance of 4 meters, he takes a left turn and walks 5 meters more. After that he takes another left turn and walks 10 meters. And then he takes a right turn and walks 5 meters to reach the coffee shop.

**In which direction is the Rishav's starting point with respect to the Coffee shop?**

- (A) South-west (B) north-west  
(C) south-east (D) north-east  
(E) None of these

**Q18 Directions: Study the following data carefully and answer the questions accordingly.**

Ritu starts moving from her Office, after moving 10m north to reach Restaurant. From the



restaurant, she takes a right turn and moves 5m to reach the big basket. Then, she takes a left turn and moves 6m to reach the Metro station. From the metro station, she takes the right and covers 6m to reach the cafe. From the cafe, she takes a right and moves 6m to reach the market. From the market, she takes left and moves 5m to reach home.

The total distance she covered from the office to home?

- (A) 40m (B) 38m  
(C) 36m (D) 34m  
(E) None of these

**Q19 Directions: Study the following data carefully and answer the questions accordingly.**

Ritu starts moving from her Office, after moving 10m north to reach Restaurant. From the restaurant, she takes a right turn and moves 5m to reach the big basket. Then, she takes a left turn and moves 6m to reach the Metro station. From the metro station, she takes the right and covers 6m to reach the cafe. From the cafe, she takes a right and moves 6m to reach the market. From the market, she takes left and moves 5m to reach home.

What is the direction of Home with respect to her office?

- (A) Northeast (B) Southwest  
(C) Southeast (D) Northwest  
(E) None of these

**Q20 Directions: Study the following data carefully and answer the questions accordingly.**

Ritu starts moving from her Office, after moving 10m north to reach Restaurant. From the restaurant, she takes a right turn and moves 5m to reach the big basket. Then, she takes a left turn and moves 6m to reach the Metro station. From the metro station, she takes the right and covers 6m to reach the cafe. From the cafe, she takes a right and moves 6m to reach the market. From the market, she takes left and moves 5m to reach home.

What is the shortest distance between a cafe and a restaurant?

- (A) 12m (B)  $\sqrt{157}$   
(C)  $\sqrt{161}$  (D) 13  
(E) None of these

**Q21 Directions: Study the following data carefully and answer the questions accordingly.**

Riya starts 7m to the south direction from Garden to reach point P. From point P, she takes a left turn and moves 12 m to reach point Q. Then, from point Q she takes right turn and covers 5m to reach point R. From point R, she takes a left turn and moves 6m to reach point S. From point S, she takes a left turn and moves 9m to reach point T. Finally, from point T, she takes a left turn again and moves 6m to reach Ground.

What is the shortest distance between point P and point R?

- (A) 20m (B) 14m  
(C) 25m (D) 13m  
(E) None of these

**Q22 Directions: Study the following data carefully and answer the questions accordingly.**

Riya starts 7m to the south direction from Garden to reach point P. From point P, she takes a left turn and moves 12 m to reach point Q. Then, from point Q she takes right turn and covers 5m to reach point R. From point R, she takes a left turn and moves 6m to reach point S. From point S, she takes a left turn and moves 9m to reach point T. Finally, from point T, she takes left turn again and moves 6m to reach Ground.

What is the direction of point T with respect to the Garden?

- (A) West (B) East  
(C) North (D) South- East  
(E) None of these

**Q23 Directions: Study the following data carefully and answer the questions accordingly.**

Riya starts 7m to the south direction from Garden to reach point P. From that point, she takes a left turn and moves 12 m to reach point





Q. Then, from point Q she takes right turn and covers 5m to reach point R. From point R, she takes a left turn and moves 6m to reach point S. From point S, she takes a left turn and moves 9m to reach point T. Finally, from point T, she takes left turn again and moves 6m to reach Ground. If there is point X, which is 3m to the north of the Ground then, what is the shortest distance between point X and point R?

- (A) 11m (B) 14m  
(C) 13m (D) 12m  
(E) None of these

**Q24 Directions: Study the following data carefully and answer the questions accordingly.**

Riya starts moving 15m in the east direction from her house to reach point A. From point A, she takes a right turn and moves 6m to reach point Q. From point Q, she takes a left turn and covers 6m to reach point C. From point C, she moves towards the South direction and moves 14m to reach point B. Then, from point B she takes a right turn and moves 21m to reach her coaching. What is the direction of point A with respect to her Coaching and the total distance covered from her house to coaching?

- (A) North-West, 80m (B) South-West, 56m  
(C) North-East, 62m (D) South-East, 70m  
(E) None of these

**Q25 Study the following information carefully and answer the questions accordingly.**

Ruhi started running from her house to her friend's house. At first she ran 4m to the West and took a right turn. After running 7m she took a left turn and covered the 15m distance. Then she ran 10m within the South direction. Finally she took 8m right turn and reached her friend's home.

What is the distance between Ruhi's home and her friend's home?

- (A)  $\sqrt{748}$  m (B)  $\sqrt{508}$  m

- (C)  $\sqrt{618}$  m (D)  $\sqrt{738}$  m  
(E) None of these

**Q26 Study the following information carefully and answer the questions accordingly.**

Ruhi started running from her house to her friend's house. At first she ran 4m to the West and took a right turn. After running 7m she took a left turn and covered the 15m distance. Then she ran 10m within the South direction. Finally she took the 8m right turn and reached her friend's home.

Find the distance between Ruhi's starting position and her present position if she turned 45 degrees in a clockwise manner from her starting position.

- (A) 2m  
(B) 6m  
(C) Can not be determined  
(D) 5m  
(E) 3 m

**Q27 Study the following information carefully and answer the questions accordingly.**

Ruhi started running from her house to her friend's house. At first she ran 4m to the West and took a right turn. After running 7m she took a left turn and covered the 15m distance. Then she ran 10m within the South direction. Finally she took the 8m right turn and reached her friend's home.

Ruhi does a U-turn and runs 2 meters from her friend's house; currently, where is Ruhi in relation to her starting point?

- (A) North (B) South-West  
(C) East (D) North-West  
(E) South-East

**Q28 Directions: Study the following data carefully and answer the questions accordingly.**



Sagar starts walking from his office in the South direction and walks for 5 km, from here he takes a left turn to reach the coffee shop which is 4 km away. From the coffee shop, he takes a left turn and walks for 1 km, and finally takes a right turn to reach the park which is 3 km away. Another person, Anurag also starts walking from the same office in the South direction and walks for 4 km, and then takes a left turn to reach the car stand which is 2 km. From the car stand, he takes a left turn and walks for 6 km and then takes right turn and walks 2 km and takes right turn and walks 2 km and then again takes left turn and walks 3 km and then takes right turn and walks for 4 km to reach the park.

**In which direction is the final position with respect to the initial position for Sagar?**

- (A) South-West (B) North-West  
(C) South (D) South-East  
(E) North

**Q29 Directions: Study the following data carefully and answer the questions accordingly.**

Sagar starts walking from his office in the South direction and walks for 5 km, from here he takes a left turn to reach the coffee shop which is 4 km away. From the coffee shop, he takes a left turn and walks for 1 km, and finally takes a right turn to reach the park which is 3 km away. Another person, Anurag also starts walking from the same office in the South direction and walks for 4 km, and then takes a left turn to reach the car stand which is 2 km. From the car stand, he takes a left turn and walks for 6 km and then takes right turn and walks 2 km and takes right turn and walks 2 km and then again takes left turn and walks 3 km and then takes right turn and walks for 4 km to reach the park.

**What is the shortest distance between the office and the car stand?**

- (A)  $\sqrt{29}$  km (B)  $\sqrt{27}$  km  
(C) 22 km (D) 29 km  
(E)  $\sqrt{20}$  Km

**Q30 Directions: Study the following data carefully and answer the questions accordingly.**

Sagar starts walking from his office in the South direction and walks for 5 km, from here he takes a left turn to reach the coffee shop which is 4 km away. From the coffee shop, he takes a left turn and walks for 1 km, and finally takes a right turn to reach the park which is 3 km away. Another person, Anurag also starts walking from the same office in the South direction and walks for 4 km, and then takes a left turn to reach the car stand which is 2 km. From the car stand, he takes a left turn and walks for 6 km and then takes right turn and walks 2 km and takes right turn and walks 2 km and then again takes left turn and walks 3 km and then takes right turn and walks for 4 km to reach the park.

**What is the total distance between covered by Sagar from Coffee shop to Park?**

- (A) 9 km (B) 10 km  
(C) 5 km (D) 4 km  
(E) None of these

**Q31 Study the following information carefully and answer the questions accordingly.**

Starting from point A, Abhi and Lokesh both traveled 4km east to reach point B. From there, Abhi took a right turn and Lokesh took a left turn. Abhi continued traveling 4km, made another right turn, traveled 2km, then made a third right turn, traveled 2km more, and finally made a left turn to travel 2km and reach his final destination Z. Meanwhile, Lokesh took a left turn from point B and traveled 2km, then made another left turn and traveled 1km, took a right turn and traveled 1km to reach point E. From there, he took another left turn and traveled 3km to reach point F. He then took a left turn, traveled 1km and took a final right turn to reach his final destination H, which was 3km ahead.

**What is the direction of F with respect to Z?**

- (A) East (B) West  
(C) North (D) South  
(E) None of these



**Q32** Study the following information carefully and answer the questions accordingly.

Starting from point A, Abhi and Lokesh both traveled 4km east to reach point B. From there, Abhi took a right turn and Lokesh took a left turn. Abhi continued traveling 4km, made another right turn, traveled 2km, then made a third right turn, traveled 2km more, and finally made a left turn to travel 2km and reach his final destination Z. Meanwhile, Lokesh took a left turn from point B and traveled 2km, then made

another left turn and traveled 1km, took a right turn and traveled 1km to reach point E. From there, he took another left turn and traveled 3km to reach point F. He then took a left turn, traveled 1km and took a final right turn to reach his final destination H, which was 3km ahead.

What is the direction of H with respect to A ?

- (A) North East
- (B) North West
- (C) South East
- (D) South West
- (E) None of these





## Answer Key

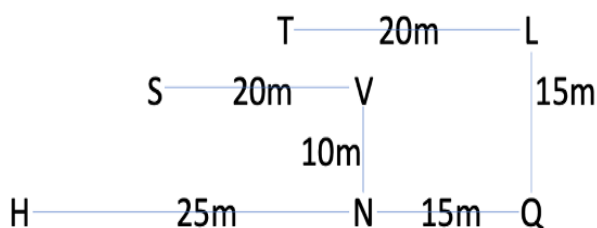
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Q2 (D)  
Q3 (A)  
Q4 (C)  
Q5 (E)  
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Q7 (C)  
Q8 (B)  
Q9 (C)  
Q10 (B)  
Q11 (A)  
Q12 (B)  
Q13 (C)  
Q14 (B)  
Q15 (C)  
Q16 (C)

Q17 (B)  
Q18 (B)  
Q19 (A)  
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Q21 (D)  
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Q24 (C)  
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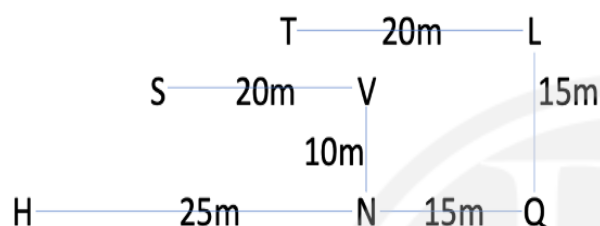
## Hints & Solutions

### Q1 Text Solution:



Hence, the required distance is 25m.

### Q2 Text Solution:



Hence, both T and S are in the north-west of point N.

### Q3 Text Solution:

It is given that,

The five members of the family are Q, R, S, T and U.

$R(24) \wedge Q(10) \wedge U(12) = S$ .

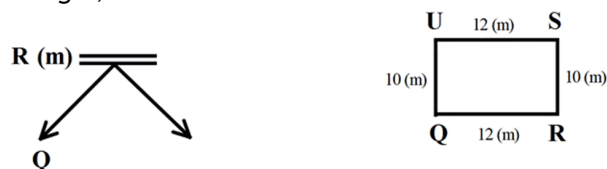
It means that,

R is the father of Q and R has two children. R stands 12 m to the east of Q.

Q stands 10 m to the south of U.

U stands 12 m to the west of S.

We get,



$U(7) \wedge T \wedge R$ .

It means that,

U stands 7 m to the south of T.

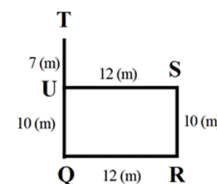
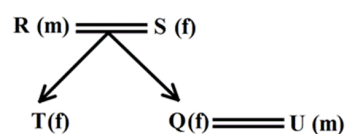
T is the daughter of R.

It is known that,

U is the husband of Q.

Hence, S and R are married.

The final arrangement is,



$U(7) \wedge T \wedge R$ .

It means that,

U stands 7 m to the south of T.

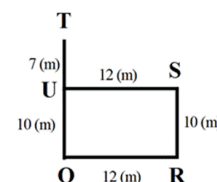
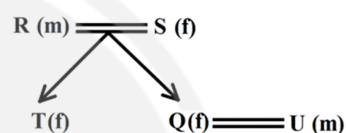
T is the daughter of R.

It is known that,

U is the husband of Q.

Hence, S and R are married.

The final arrangement is,



U is standing to the north-west of R

### Q4 Text Solution:

It is given that,

The five members of the family are Q, R, S, T and U.

$R(24) \wedge Q(10) \wedge U(12) = S$ .

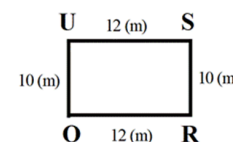
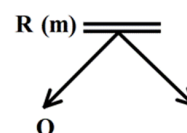
It means that,

R is the father of Q and R has two children. R stands 12 m to the east of Q.

Q stands 10 m to the south of U.

U stands 12 m to the west of S.

We get,



$U(7) \wedge T \wedge R$ .

It means that,

U stands 7 m to the south of T.

T is the daughter of R.

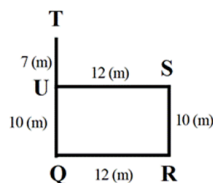
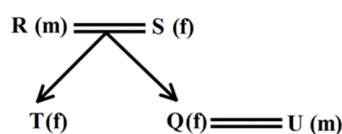
It is known that,

U is the husband of Q.



Hence, S and R are married.

The final arrangement is,



**U(7)?T\* R.**

It means that,

U stands 7 m to the south of T.

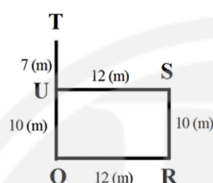
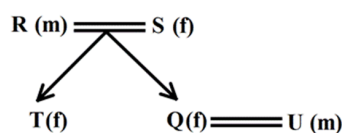
T is the daughter of R.

It is known that,

U is the husband of Q.

Hence, S and R are married.

The final arrangement is,



The approximate shortest distance between S and T = ST

$$= \sqrt{(7)^2 + (12)^2}$$

$$= \sqrt{(49 + 144)}$$

$$= \sqrt{(193)}$$

$$= 13.89 \text{ m}$$

$$= 14 \text{ m}$$

**U(7)?T\* R.**

It means that,

U stands 7 m to the south of T.

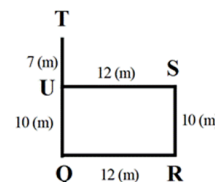
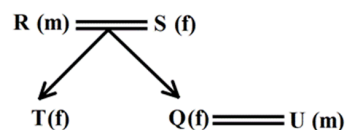
T is the daughter of R.

It is known that,

U is the husband of Q.

Hence, S and R are married.

The final arrangement is,



**U(7)?T\* R.**

It means that,

U stands 7 m to the south of T.

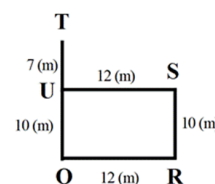
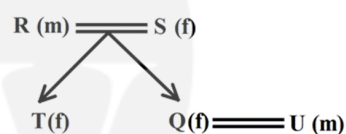
T is the daughter of R.

It is known that,

U is the husband of Q.

Hence, S and R are married.

The final arrangement is,



Both S and T are female members of the family.

#### Q5 Text Solution:

It is given that,

The five members of the family are Q, R, S, T and U.

**R (24)^ Q (10)? U (12)= S.**

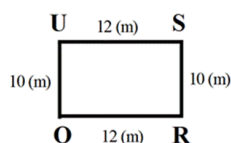
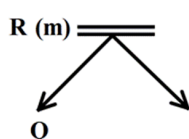
It means that,

R is the father of Q and R has two children. R stands 12 m to the east of Q.

Q stands 10 m to the south of U.

U stands 12 m to the west of S.

We get,



#### Q6 Text Solution:

It is given that,

The five members of the family are Q, R, S, T and U.

**R (24)^ Q (10)? U (12)= S.**

It means that,

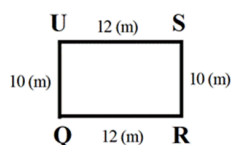
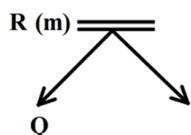
R is the father of Q and R has two children. R stands 12 m to the east of Q.

Q stands 10 m to the south of U.

U stands 12 m to the west of S.

We get,





**U(7)?T\* R.**

It means that,

U stands 7 m to the south of T.

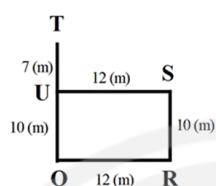
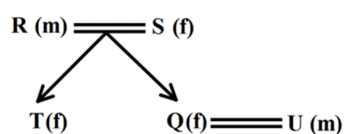
T is the daughter of R.

It is known that,

U is the husband of Q.

Hence, S and R are married.

The final arrangement is,



**U(7)?T\* R.**

It means that,

U stands 7 m to the south of T.

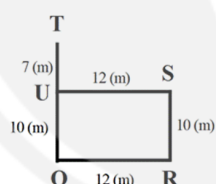
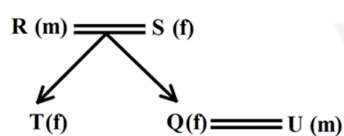
T is the daughter of R.

It is known that,

U is the husband of Q.

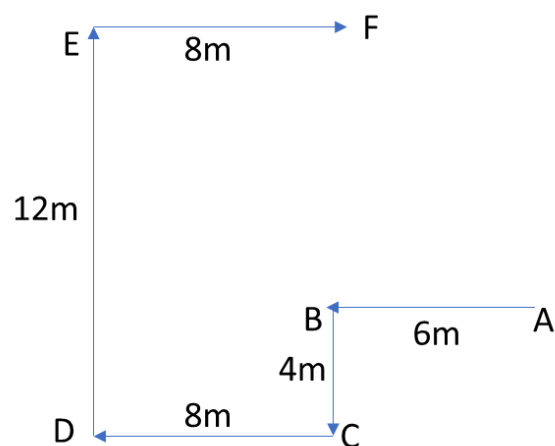
Hence, S and R are married.

The final arrangement is,

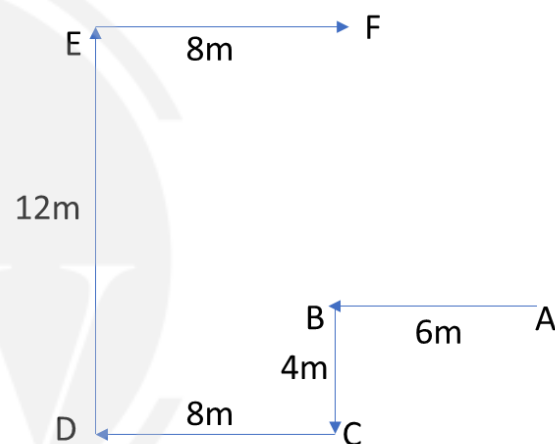


Here, U is standing to the west of S and S is U's mother-in-law.

**Q7 Text Solution:**

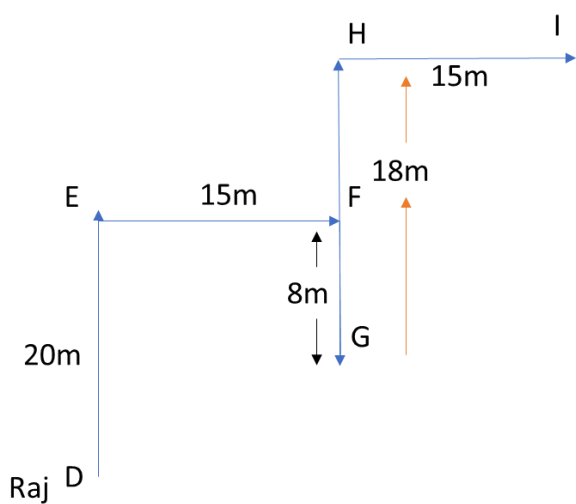


**Q8 Text Solution:**

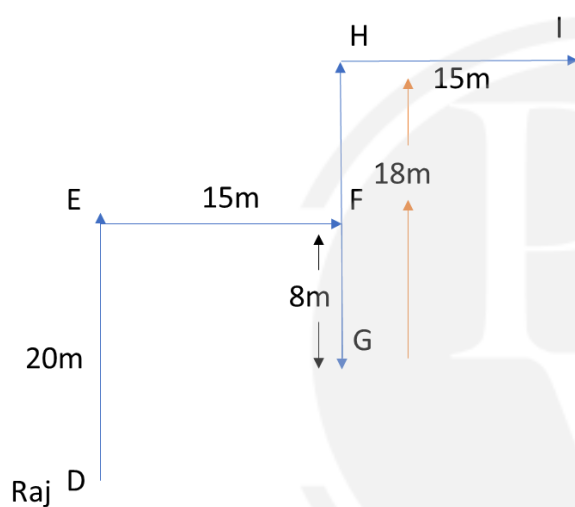


**Q9 Text Solution:**

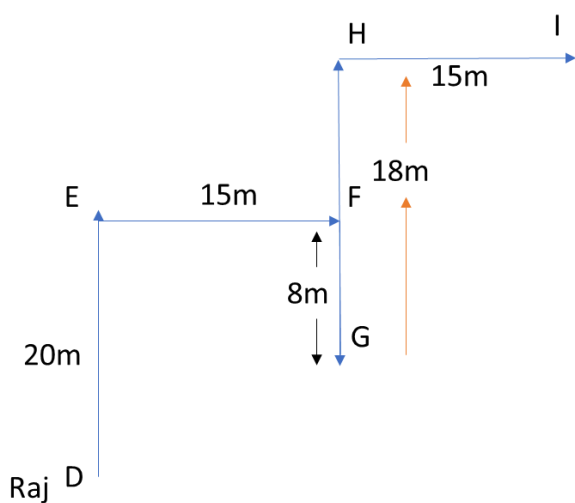




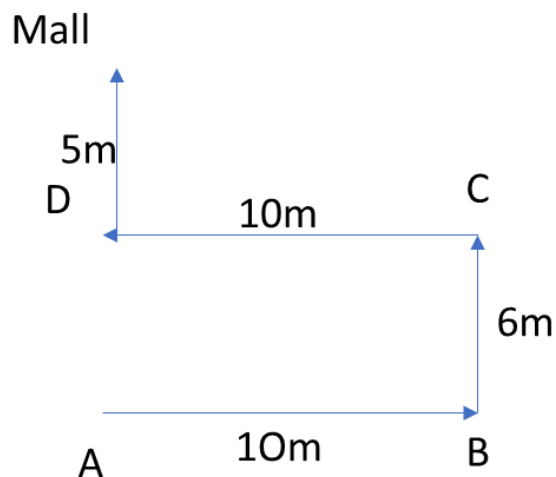
Q10 Text Solution:



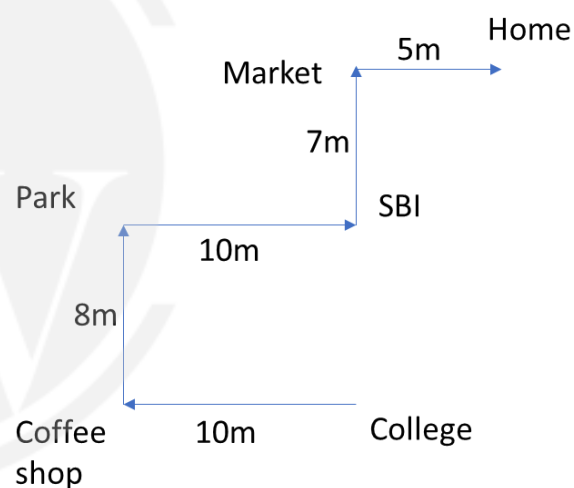
Q11 Text Solution:



Q12 Text Solution:

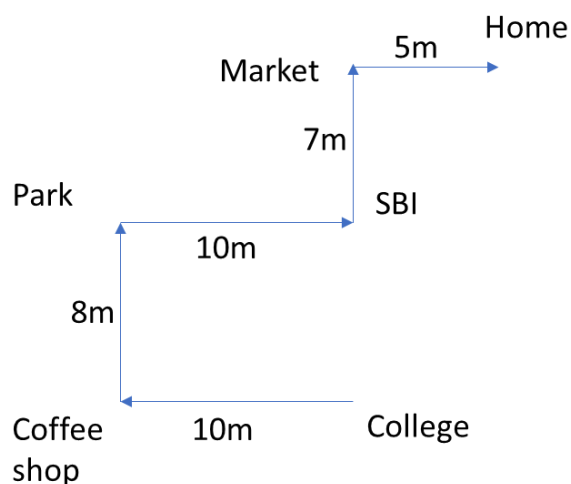


Q13 Text Solution:



Q14 Text Solution:



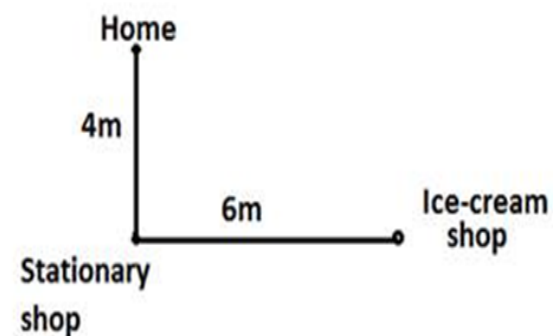
**Q15 Text Solution:**

Riddhi starts walking from her home to the tuition.

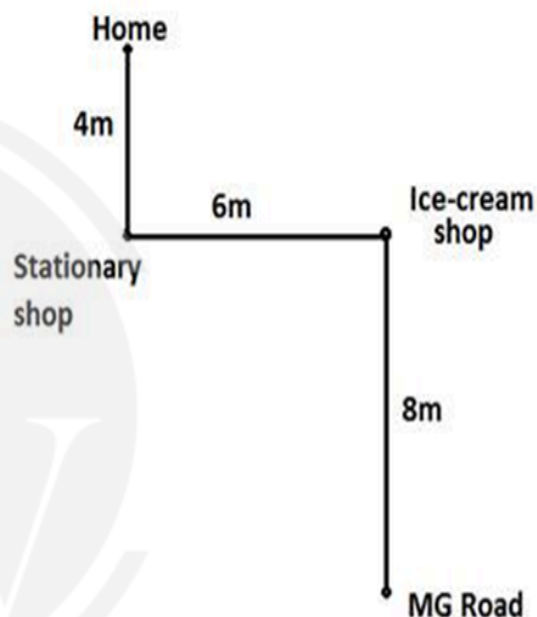
- She walks 4m in the south direction and reaches the stationary shop.



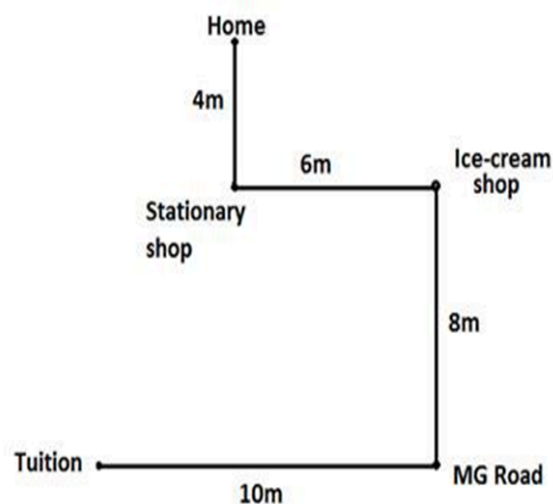
- She buys a notebook, takes a left turn and walks for 6m in the same direction to reach an ice-cream shop.



- She buys an ice-cream and takes a right turn.
- She walks 8m in the same direction till MG Road.

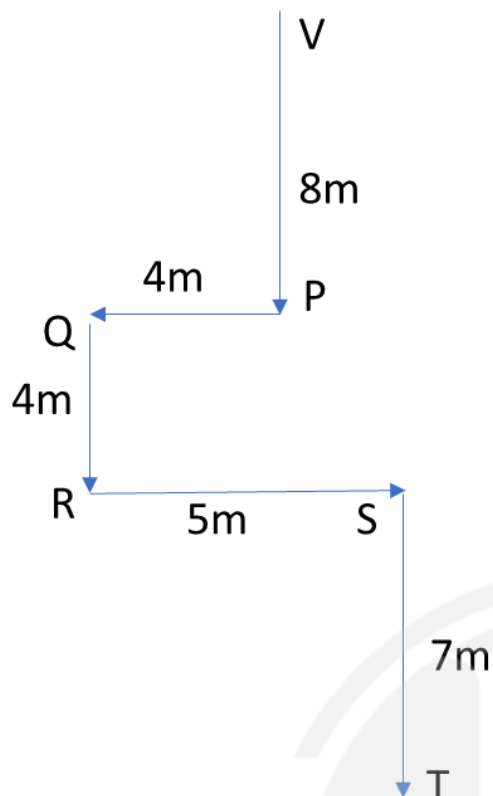


- She takes a right turn and walks for 10m in the same direction to reach her tuition.

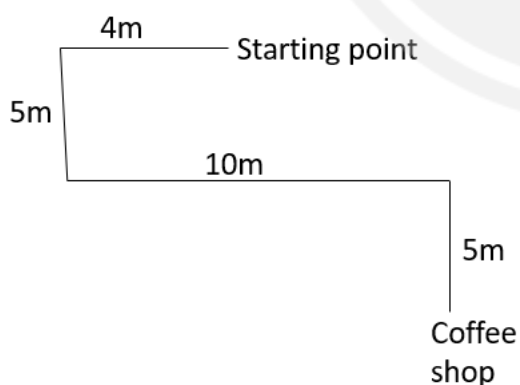




Q16 Text Solution:

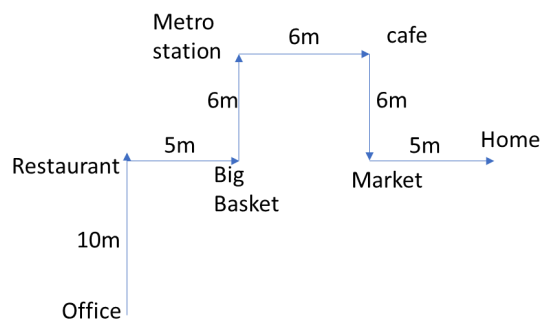


Q17 Text Solution:



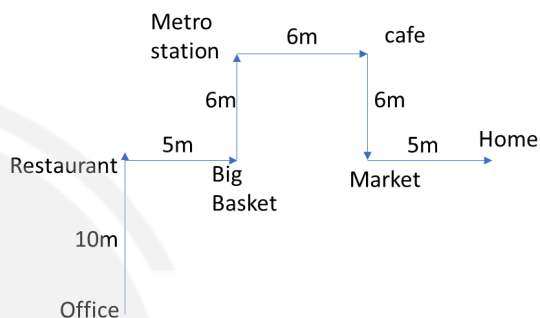
- Rishav's starting point is in north-west of Coffee shop.

Q18 Text Solution:

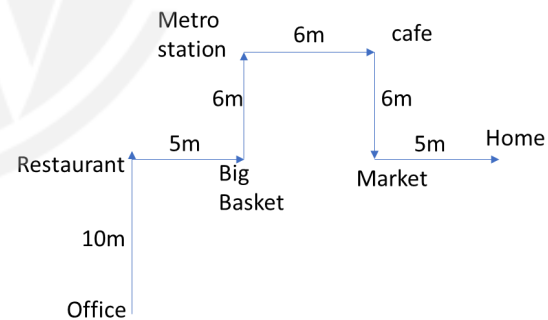


$$\text{Total distance} = 10 + 5 + 6 + 6 + 6 + 5 = 38\text{m}$$

Q19 Text Solution:



Q20 Text Solution:



Let Restaurant, Market and Cafe be R, M and C respectively

$$= +$$

$$= +$$

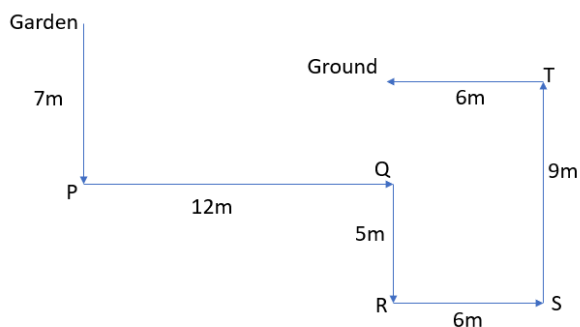
$$= 121 + 36$$

$$= 157$$

$$\text{DA} = \text{m}$$

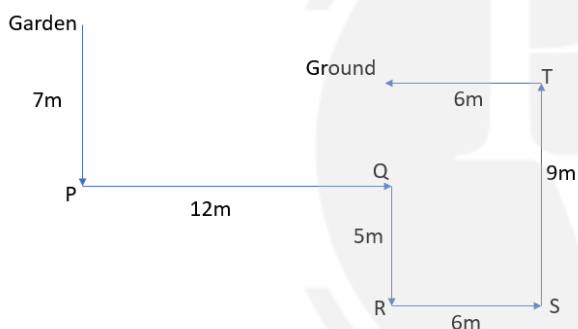
Q21 Text Solution:



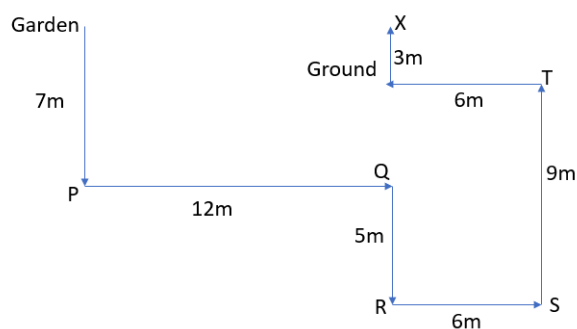


$$\begin{aligned}
 &= + \\
 &= + \\
 &= 144 + 25 \\
 &= 169 \\
 &PR = m = 13m
 \end{aligned}$$

### Q22 Text Solution:

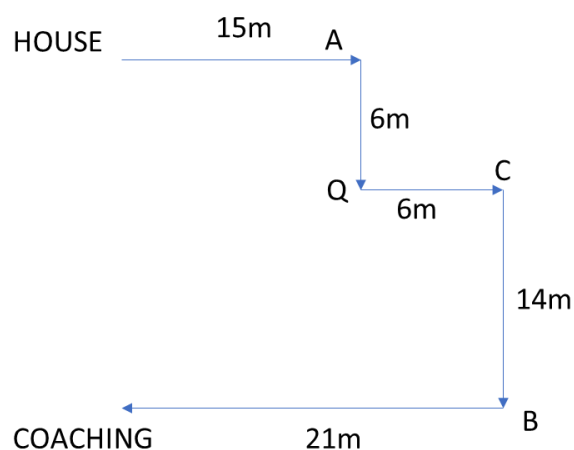


### Q23 Text Solution:



Shortest Distance between point X and point R =  
 $3 + 9(4 + 5) = 12m$

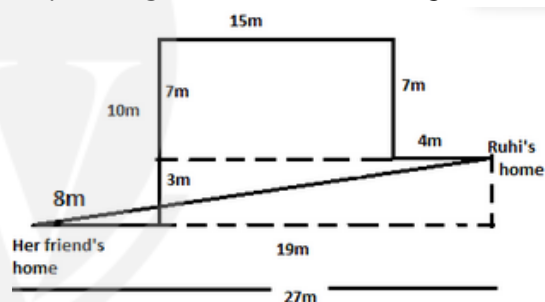
### Q24 Text Solution:



Total distance covered from her to coaching =  $15 + 6 + 6 + 14 + 21 = 62m$

### Q25 Text Solution:

As per the given directions the diagram is,

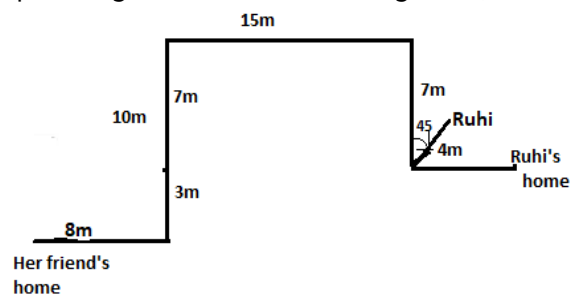


Hence, the distance between Ruhi's home and her friend's home =  $\sqrt{(27^2 + 3^2)} = \sqrt{(729 + 9)} = \sqrt{738}m$

Hence, the correct answer is option D.

### Q26 Text Solution:

As per the given directions the diagram is,



Hence, there is nothing mentioned about the distance of Ruhi's new position.

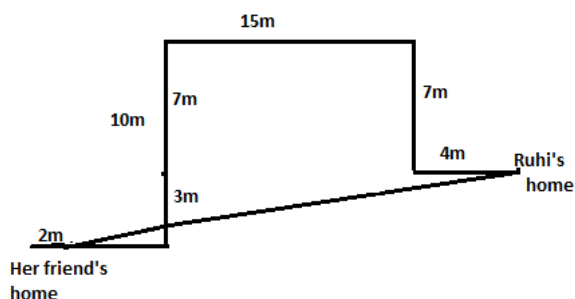


So, we cannot determine the distance between Ruhi's new and starting position.

**Hence, the correct answer is option C.**

**Q27 Text Solution:**

As per the given directions the diagram is,



Hence, Ruhi's currently position is in the South-West direction

from Ruhi's Starting position.

**Hence, the correct answer is option B.**

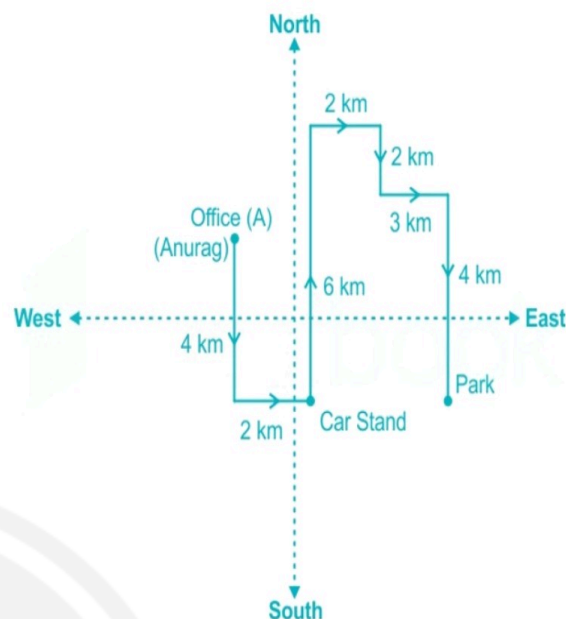
**Q28 Text Solution:**

1) Sagar starts walking from his office in the South direction and walks for 5 km, from here he takes a left turn to reach the coffee shop which is 4 km away. From the coffee shop, he takes a left turn and walks for 1 km, and finally takes a right turn to reach the park which is 3 km away.

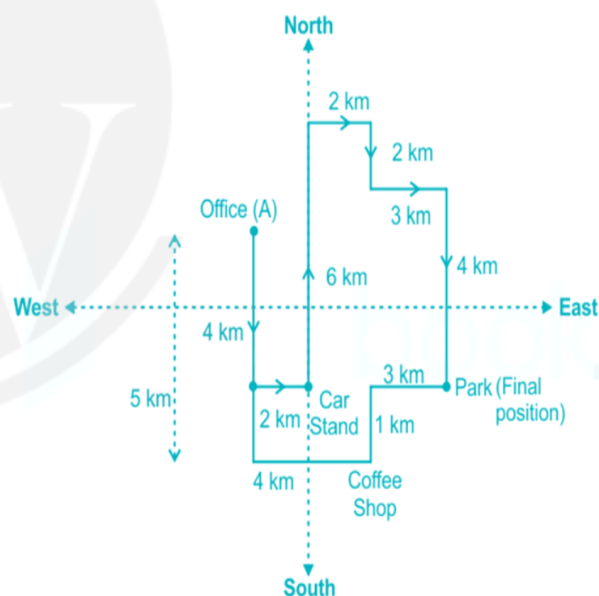


2) Anurag starts walking in the South direction and walks for 4 km, and then takes a left turn to reach the car stand which is 2 km. From the car stand, he takes a left turn and walks for 6 km and then takes right turn and walks 2 km and takes

right turn and walks 2 km and then again takes left turn and walks 3 km and then takes right turn and walks for 4 km to reach the park.



By merging all the diagrams, the final diagram is:

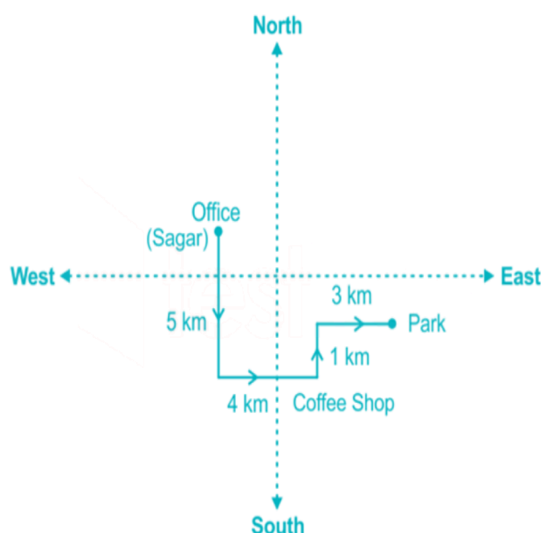


Hence, the final position is in the **South-East** direction with respect to the initial position.

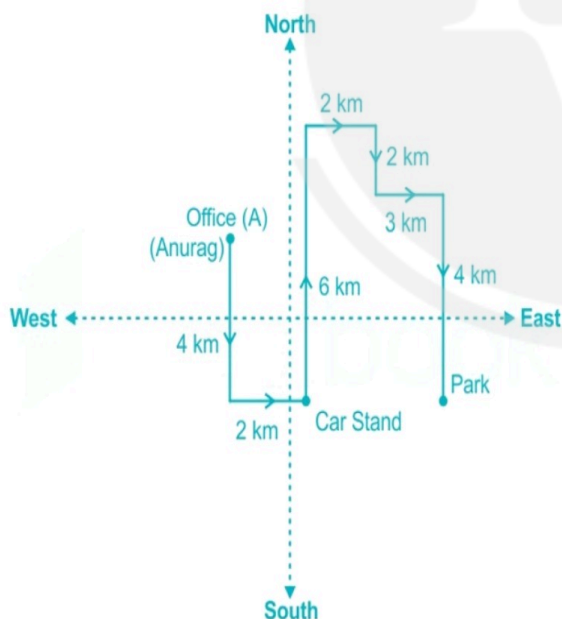
**Q29 Text Solution:**

1) Sagar starts walking from his office in the South direction and walks for 5 km, from here he takes a left turn to reach the coffee shop which is 4 km away. From the coffee shop, he takes a left turn and walks for 1 km, and finally takes a right turn to reach the park which is 3 km away.

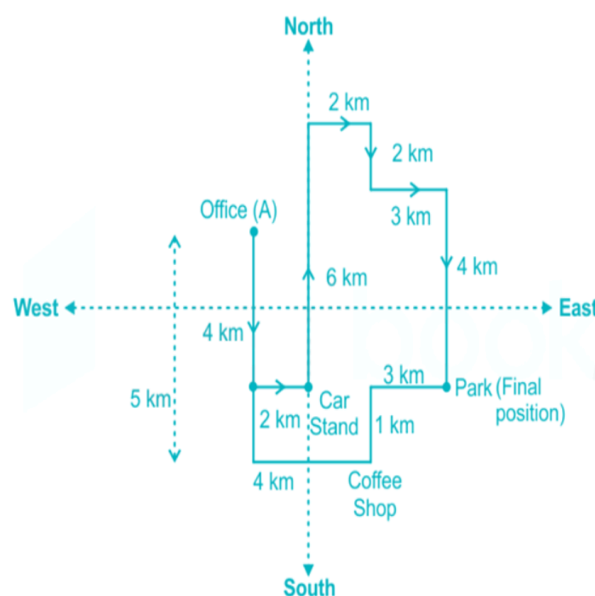




2) Anurag starts walking in the South direction and walks for 4 km, and then takes a left turn to reach the car stand which is 2 km. From the car stand, he takes a left turn and walks for 6 km and then takes right turn and walks 2 km and takes right turn and walks 2 km and then again takes left turn and walks 3 km and then takes right turn and walks for 4 km to reach the park.



By merging all the diagrams, the final diagram is:



Since Sagar and Anurag start from the same office (point A)

The shortest distance between the office and the car stand:

**By using Pythagoras theorem:**

$$(\text{Hypotenuse})^2 = (\text{Perpendicular})^2 + (\text{Base})^2$$

$$(\text{Hypotenuse})^2 = (4)^2 + (2)^2$$

$$(\text{Hypotenuse})^2 = 16 + 4$$

$$\text{Hypotenuse} = \sqrt{20}$$

Hence, the shortest distance between the office and the car stand is  $\sqrt{20}$  Km.

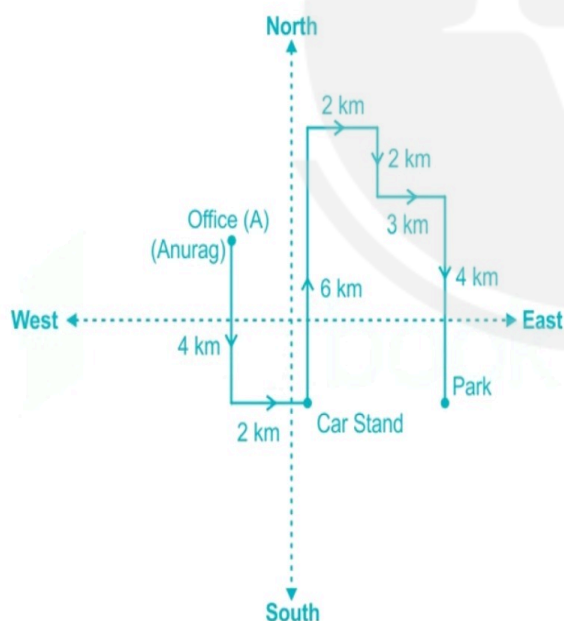
#### Q30 Text Solution:

1) Sagar starts walking from his office in the South direction and walks for 5 km, from here he takes a left turn to reach the coffee shop which is 4 km away. From the coffee shop, he takes a left turn and walks for 1 km, and finally takes a right turn to reach the park which is 3 km away.

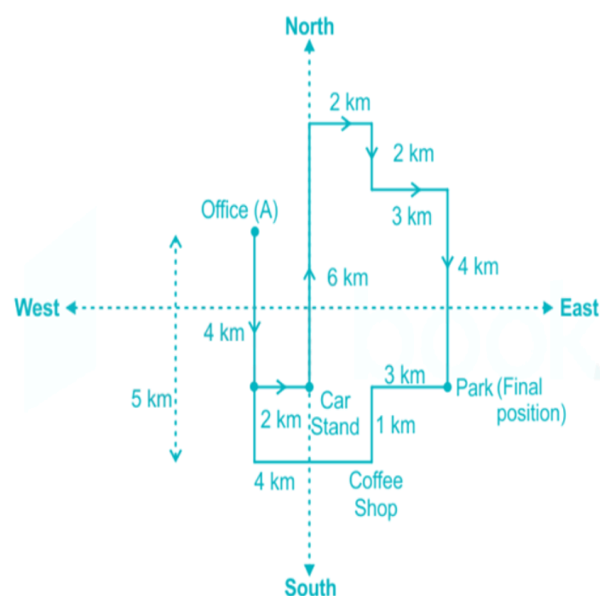




2) Anurag starts walking in the South direction and walks for 4 km, and then takes a left turn to reach the car stand which is 2 km. From the car stand, he takes a left turn and walks for 6 km and then takes right turn and walks 2 km and takes right turn and walks 2 km and then again takes left turn and walks 3 km and then takes right turn and walks for 4 km to reach the park.



By merging all the diagrams, the final diagram is:

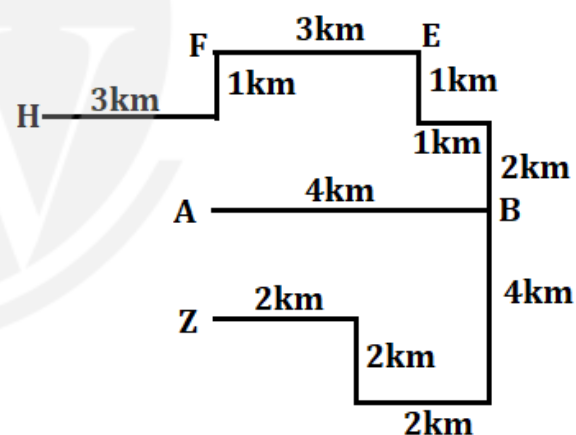


The total distance between Coffee shop to Park =  $1 \text{ km} + 3 \text{ km} = 4 \text{ km}$

Hence, the total distance between the Coffee shop to Park is **4 km**.

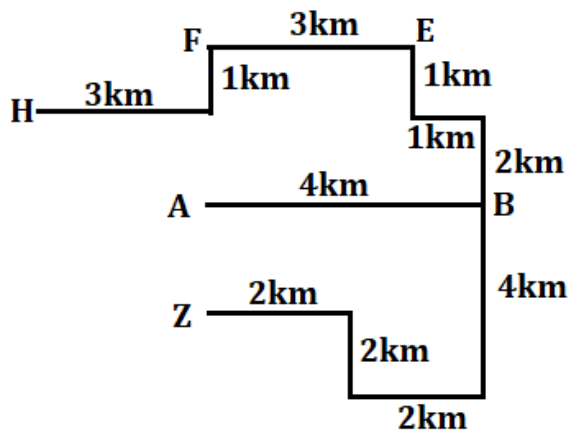
**Q31 Text Solution:**

F is north of Z



**Q32 Text Solution:**



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