

DIRECTIONS SENSE

1. Kunal walks 10 km towards North. From there he walks 6 km towards South. Then, he walks 3 km towards East. How far and in which direction is he with reference to his starting point?

- A. 5 km West
- B. 7 km West
- C. 7 km East
- D. 5 km North-east

2. Point A is 30 m to the east of point B. Point C is 10 m to the south of point A. Point D is 15 m to the west of point C. Point E is exactly in the middle of the points D and F. Points D, E and F lie in a straight line. The length of the DEF is 20 m. Point F is to the north of point D. Point G is 15 m to the east of Point F. How far and in which direction is point G from point A?

- A. 10 m, South
- B. 15 m, North
- C. 10 m, North
- D. 10 m, East

3. If Sita walks 10 km towards West, then turned towards South and walked 10 km, then turned East walked 10 km, and turned North walked 10 km. How far she is from starting point?

- A. 20 km
- B. 40 km
- C. 10 km
- D. 0 km

4. The door of B's house faces east. From the back side of his house, B walks straight 50 m. Again he walks 25m after turning to his left, then he turns to his right and walks 50m. Finally he turns towards north and walks 25m and stops. What is the distance between the starting and the end point?

- A. 80 m
- B. 100 m
- C. 150 m
- D. 120 m

5. Virendra's house is 30 m to the left of the Shani Dev Temple, which is 40 m to the north of the Church. One day, Virendra takes the road which is parallel to the temple-

Church road and walks for 50 m before turning to his right. He further walks for 20 m and reaches the Gym.

What is difference between the straight distance between Virendra's house to Church and Shani Dev Temple to Gym?

- A. 20.7 m
- B. 50 m
- C. 37.7 m
- D. 70.7 m

6. 'A%B' means 'A is south of B',

'A\$B' means 'B is west of A',

'A@B' means 'A is east of B'

'A&B' means 'B is north of A'

(Consider Distance between all the elements is equal)

In the given expression 'I%K&T%U&B\$A@Z' what is the direction of T with respect to A?

- A. South
- B. North
- C. South - East
- D. East

7. Arshad starts walking from his house in north direction. After walking for 400meters, he reaches the HDFC Bank. Then, from the HDFC Bank, he walks 50 meter in the same direction in which he is facing. Then he turns right and walks 180 meters. Then he finally he turns and walks 130 meters in south-east direction to reach his office, HCL which is in east of the HDFC Bank.

What is the shortest between Arshad's house and his office, HCL?

- A. 450m
- B. 500m
- C. 550m
- D. 600m

8. One fine morning on his morning walk, Kapil noticed Seeta who was doing Soorya namaskar facing the rising sun. He went to her, greeted her Good Morning and took a left turn. In which direction, is he walking now?

- A. North

- B. South
- C. East
- D. West

9. Bonny moves 30 meters towards south then turns to his right and starts moving straight till he completes another 30 meters. Then turning to his left he moves for 20 meters. He again then turns to his left and moves for 30 meters. How far is he from his initial position?

- A. 30 metres
- B. 50 metres
- C. 10 metres
- D. 60 metres

In an Audi showroom there are five cars namely Audi A3, Audi A4, Audi A8, Audi A6 and AudiQ7. The colors of the cars are Black, White, Pink, Grey, and Blue respectively. All the cars were parked in a showroom facing towards north direction.

Audi A3 car is parked 30m to the right of White color car.

Blue color car is parked 70m to the south of Audi A3 car.

Audi A8 car is parked 40m to the west of Audi A4 car.

Grey color car is parked 100m to the north of Blue color car.

10. If a customer walks from Pink colored car, then see White colored car followed by Black, Blue and then grey colored cars. How many meters the customer walked, if he/she had walked straight distance through out the route?

- A. 240m
- B. 120m
- C. 320m
- D. 260m

11. Which car is in the north-east of the car, which is to the left of Black colored car?

- A. Audi A4
- B. Audi A3
- C. Audi Q7
- D. Audi A6

12. Point B is 25 m south of point A. Point C is 30 m east of point B. Point D is 15 m north of point C. Point E is 10 m west of point D.

If point X is 30 m east of Point A, then Point D is how far and in which direction from point X?

- A. 10 m, North
- B. 5 m, North
- C. 15 m, South
- D. 10 m, South

13. Aman started from his school, walks 11 m towards the north then takes a right turn and walks 9 m after that he takes right turn again, walks 17 m and stops at his house. Rajat also starts from the same School, walks 14 m towards the south, then takes a left turn and walks 15 m before stopping at his house.

What is the direction of school with and Aman's house?

- A. Southwest
- B. Northwest
- C. North
- D. Southeast

14. Anaya is 15m to the west of Rithika. Rithika is 20m to the north of Genelia. Genelia is 12m to the east of Diksha. Faizah is 16m to the north of Diksha. If Anaya has to meet Faizah through the shortest distance and then has to meet Genelia from Faizah's point through the shortest distance, then what is the total distance travelled by Anaya?

- A. 25m
- B. 20m
- C. 35m
- D. 30m

15. Car X starts from point A and travels in a straight line towards north for 8 km and takes a right turn and travels for 12 km then turns towards left and travels for 6 km before taking a right turn it travels for 10 km and takes a right turn and travels for 15 km and reaches a point B which is 8 km towards west of the point C where car Y stands.

What is total distance travelled by car X in east direction?

- A. 18 km
- B. 22 km
- C. 29 km
- D. 30 km

16. Five friends Teenu, Bani, Chandni, Dev and Joy are playing Hide and Seek and standing randomly. Bani is to the northeast of Joy. Dev is 20 m to the east of Joy, who is 60 m to the west of Teenu. Chandni is to the northwest of Dev and in the line of Joy and Bani. Dev is 40 m to the south of Bani.

What angle does Bani make at the point where Teenu is standing while Joy, Dev and Teenu are in the same line?

- A. 135°
- B. 45°
- C. 90°
- D. 60°

In a city, Fruit lane was to the north-west of Jewellery lane. Grocery lane was in the east of fruit lane which was towards the south of vegetable lane. Toy lane was towards the south-west of grocery lane such that it was situated towards the east of Jewellery lane. Clothes lane was 20 km towards the north of Jewellery lane, which was 4 times the distance between Jewellery lane and Toy lane. Inner circle was the mid point between Fruit lane and Grocery lane and also Jewellery lane and Clothes lane. The distance between Vegetable lane and fruit lane was half of the distance between Clothes lane and Inner circle.

17. If the distance between fruit lane and inner circle is 12m, then find the shortest distance between vegetable lane and clothes lane?

- A. 13 m
- B. 15 m
- C. 20 m
- D. Can't be determined

18. Ram was moving to Clothes Lane from Jewellery Lane and Shyam was going to Jewellery Lane from Clothes Lane. They met each other at Inner Circle at 5 in the evening. Towards which direction Ram's shadow will fall?

- A. Towards toy lane
- B. Towards fruit lane
- C. Towards Shyam's right hand
- D. Both options B and C are correct.

Six students namely P1, Q2, R3, S4, T5 and U6 are standing in different directions in a playground. Each of these persons has different weight.

T5, who is 4m to the east of R3, is heavier than only two persons. P1, who is the heaviest among all, is standing 4m to the west of Q2. Q2 is lighter than T5 but not the lightest. Both R3 and U6, who is standing 5m northeast of S4, are heavier than the person who is standing nearest to R3. S4 is 3m south of Q2. P1, Q2 and U6 are horizontally in line. T5 is 6m north of U6.

19. Who is the immediate heaviest than the person who is standing northeast of Q2?

- A. U6
- B. R3
- C. P1
- D. Either A or B

20. If U6 is not the second heaviest person, then what is the distance between P1 and the third heaviest person?

- A. 9m
- B. 8m
- C. $2\sqrt{13}$ m
- D. 11m

21. Point G is 30m to the east of point B, which is 20m to the north of point A. Point F is 16m to the west of point E. Point H is 12m to the south of point F. Point E is 10m to the south of point G. Point C is 13m to the east of point F.

If point Y is 6m south of point G then find the shortest distance between point C and point Y?

- A. 6 m
- B. 7 m
- C. 5 m
- D. 4 m

22. Point L is 60 m to the north of point G. Point M is 12 m to the east of point F, which is exactly in the middle of the road connecting points M and T. Point T is 40 m to the south of point G. Point P is 50 m to the north-east of point T, which is 30 m to the west of point X.

If point O intersects the road connecting points G and T at 5 m such that point T is nearest to point O, then point O is how much far (shortest route) and in which direction from point F?

- A. 15m, North-east
- B. 13m, North-west
- C. 10m, South-east
- D. 9m, South-west

23. Ramlin and Divya are two friends. They start walking from same point but in opposite direction. Ramlin walks towards north. After walking 10km Ramlin takes a right turn and walks for 5km then turns 90 degree in clockwise direction and walks 20km to reach his office and then takes a left turn and walks 5km to reach canteen. Divya also follows the same condition as Ramlin.

What is the direction of Divya's office with respect to the starting point?

- A. North-west
- B. North
- C. South
- D. South-east

Eight persons namely Aadit, Babar, Chahel, Danvir, Etash, Faisal, Gagan and Hardik were standing in different directions with respect to each other. Each of them scored different marks in the English subject among 34, 39, 43, 48, 54, 63 and 70 but not necessarily in the same order. Only two of them have equal marks.

Aadit is 12m west of Etash and his mark is 54. Only Chahel scored the highest mark and stands 15m west of the person, whose marks is 63. Babar stands 8m north of Hardik, who scored 34 marks. Hardik is 20m south-west of Etash. The mark scored by Etash and the person, who stands 15m west of Chahel is same. Gagan is 15m west of the person, whose marks is 43. The one who scored third lowest mark is 16m north of Chahel. Danvir is not to the north-west of Aadit. Etash's mark is more than 43. Babar scored more marks than Aadit. Aadit, Babar and Hardik are standing in a vertical line.

24. Who among the following people scored less marks than the one who stands exactly to the east of Gagan?

I. Gagan

II. Aadit

III. Hardik

- A. Only I
- B. Only II
- C. Only III
- D. Both I and III

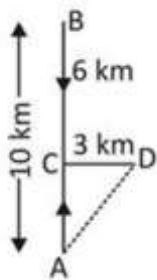
25. How many persons scored more marks than the one who is exactly to the east of Aadit?

- A. Two
- B. Three
- C. Four
- D. Five

Answers:

1. D

Solution:

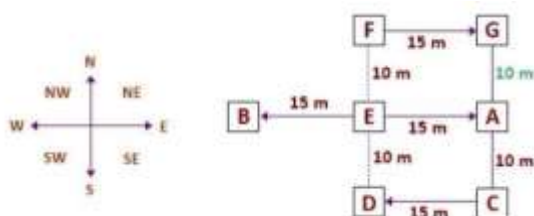


Clearly, Kunal moves from A 10 km north-wards up to B, then moves 6 km southwards up to C, turns towards East and walks 3 km up to D. Then, $AC = (AB - BC) = (10 - 6) = 4$ km. So, Kunal's distance from the starting point A.

$$AD = \sqrt{(AC^2 + CD^2)} = \sqrt{4^2 + 3^2} = 5 \text{ km}$$

2. C

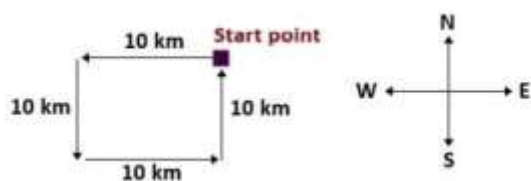
Solution:



It's clear from the diagram that point G is 10 m to the north of point A.

3. D

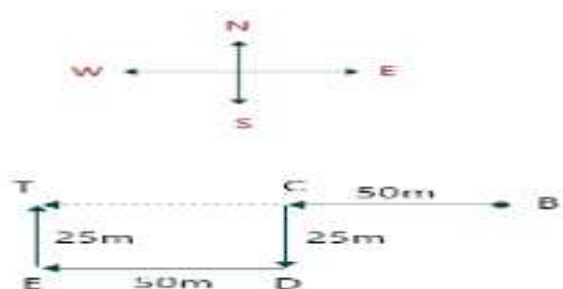
Solution:



It's clear from the diagram that Sita is 0 km far from the starting point.

4. B

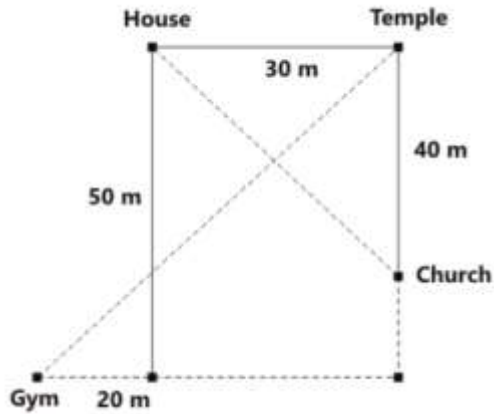
Solution:



We can clearly observe from figure that the distance between starting point to end point (B to T) is $50\text{m} + 50\text{m} = 100\text{m}$.

5. A

Solution:



Applying the Pythagoras theorem, we get

$$\text{Distance between the house and the church} = \sqrt{30^2 + 40^2}$$

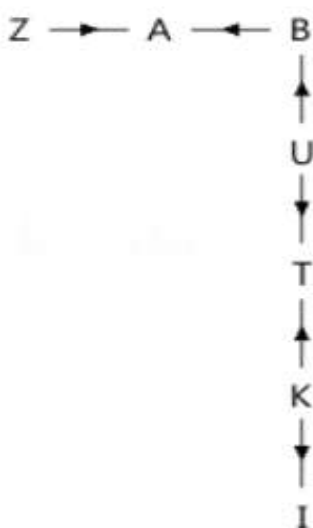
$$= \sqrt{900 + 1600} = \sqrt{2500} = 50 \text{ m}$$

$$\text{Now, the distance between the temple and the gym} = 50^2 + 50^2 = 50\sqrt{2} \text{ m}$$

$$\text{Therefore, the required difference} = 50 (\sqrt{2} - 1) = 50 \times 0.414 = 20.7 \text{ m}$$

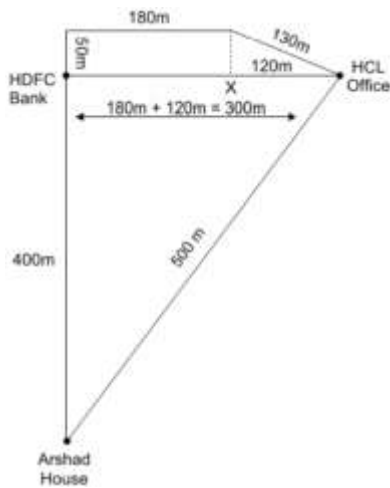
6. C

Solution:



7. B

Solution:



From HDFC Bank, he is facing north direction. From there he walks 50 meters.

Let Point X be the point, to find the distance between HCL and X.

$$\sqrt{130^2 - 50^2} = \sqrt{16900 - 2500} = \sqrt{14400} = 120 \text{ m}$$

To find Shortest Distance between Arshad and HCL-Office

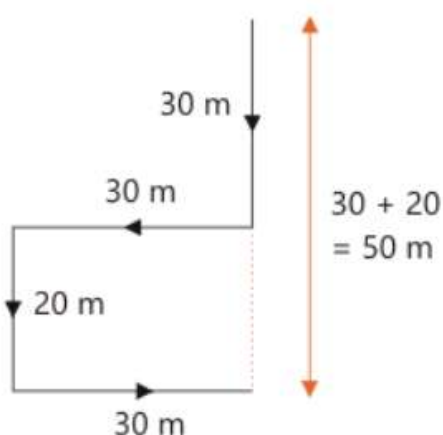
$$\sqrt{400^2 + 300^2} = \sqrt{160000 + 90000} = \sqrt{250000} = 500 \text{ m}$$

8. B

Solution: Initially, Seeta was facing east and thus we can say that Kapil was running in West direction and after talking a left turn, he will start moving in South direction.

9. B

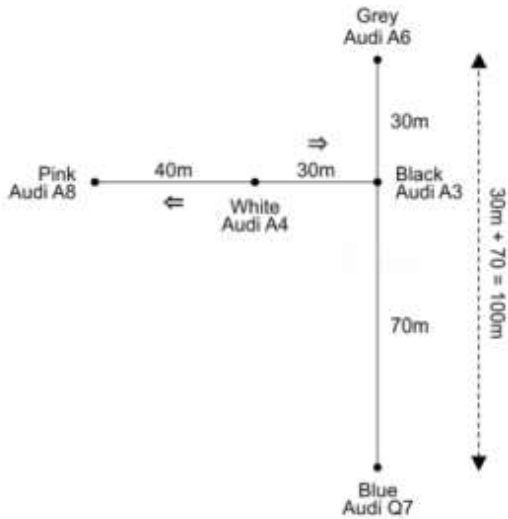
Solution:



We can clearly observe from the above figure that, Bonny is 50 m far from starting point.

10. A

Solution:



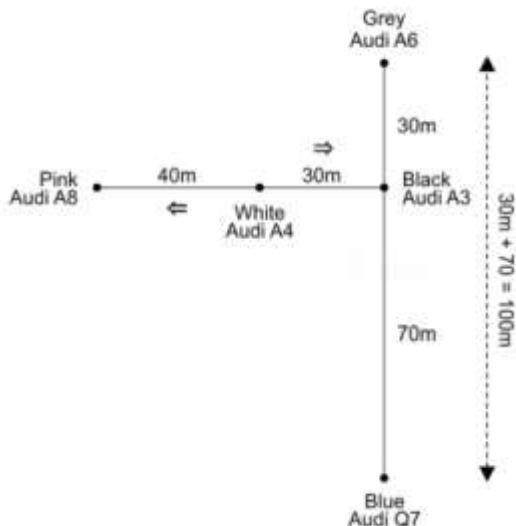
The following common explanation, we get "240m".

From figure, Pink to white = 40m, White to Black = 30m, Black to Blue = 70m & Blue to Grey = 100m

$$\text{Sum} = 40\text{m} + 30\text{m} + 70\text{m} + 100\text{m} = 240\text{m}$$

11. D

Solution:



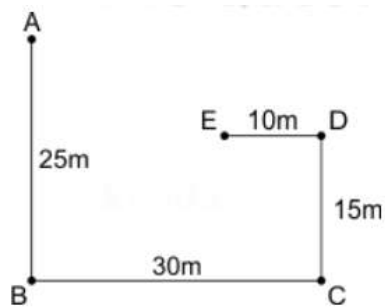
The following common explanation, we get "Audi-A6, Grey colored car".

Left of Black [Audi A3] colored car is White [Audi A4] & Pink colored [Audi A8].

North-east of both White [Audi A4] & Pink [Audi A8] is Audi-A6, Grey colored car.

12. D

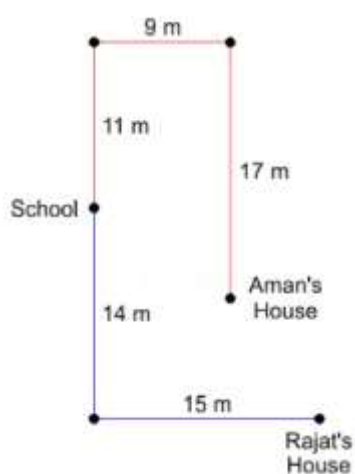
Solution:



Following the common explanation we can say point D is 10 m away and towards south of point X.

13. B

Solution:



Following the final solution we can say that School is in northwest direction with respect to Aman's house.

14. A

Solution:



Explanation/References:

- Anaya is 15m to the west of Rithika.

- Rithika is 20m to the north of Genelia.
- Genelia is 12m to the east of Diksha.
- Faizah is 16m to the north of Diksha.

Shortest distance between Anaya to Faizah:

$$\sqrt{4^2 + 3^2} = \sqrt{16 + 9} = \sqrt{25} = 5\text{m}$$

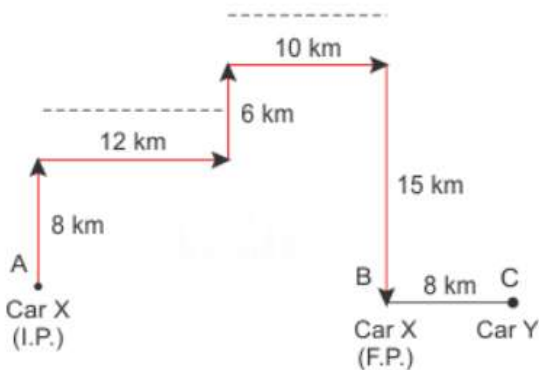
Shortest distance between Anaya to Genelia:

$$\sqrt{16^2 + 12^2} = \sqrt{256 + 144} = \sqrt{400} = 20\text{m}$$

Total distance travelled by Anaya = 5m + 20m = 25 m

15. B

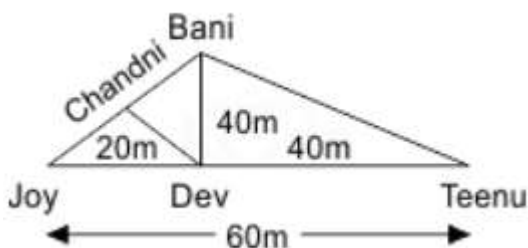
Solution:



Following the final solution, we can say that total distance travelled by car X in east direction is $(10 + 12) \text{ km} = 22 \text{ km}$.

16. B

Solution:

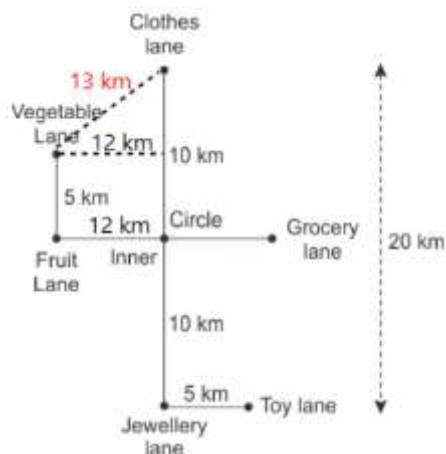


As per the diagram, the distance between Dev and Bani is 40 m while the distance between Dev and Teenu is also 40 m. Clearly, if we connect the points Bani, Dev and Teenu, they will form an isosceles triangle with angle BDT (Bani, Dev, Teenu) to be 90° .

Therefore, the angle BTD(Bani, Teenu, Dev) must be 45° .

17. A

Solution:



From the following explanation it is clear that if the distance between fruit lane and inner circle is 12m, then the shortest distance between vegetable lane and clothes lane is 13m.

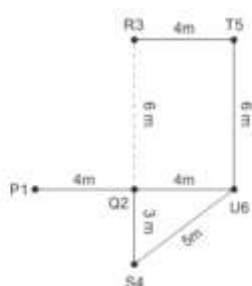
18. D

Solution: Following common explanation, we can say that Ram's shadow will fall towards Ram's left hand, which means his shadow must be towards Shyam's right hand since they are facing each other.

Besides, Ram's shadow is also falling towards Fruit Lane.

19. D

Solution:



Students	P1	R3/U6	U6/R3	T5	Q2	S4
Position	1	2	3	4	5	6

Following the common explanation, we get "None of these".

From direction diagram, T5 is standing north-east of Q2.

Either R3 or U6 is the immediate heaviest person than T5. So either option A or B.

20. B

Solution: Following the common explanation, we get "8m".

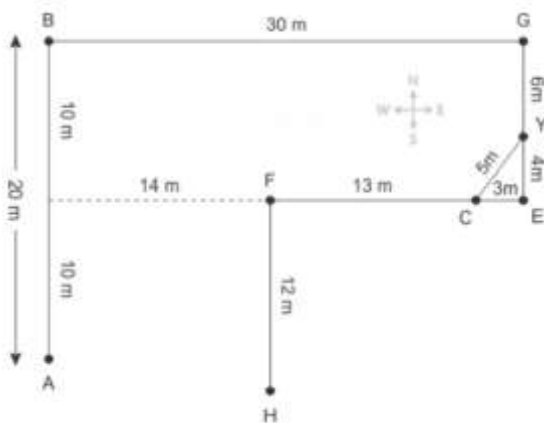
As per question, U6 is not the second heaviest person. Therefore R3 is the second heaviest person.

U6 is the third heaviest person

From direction diagram, the distance between P1 and U6 (3rd heaviest person) is $4\text{m} + 4\text{m} = 8\text{m}$

21. C

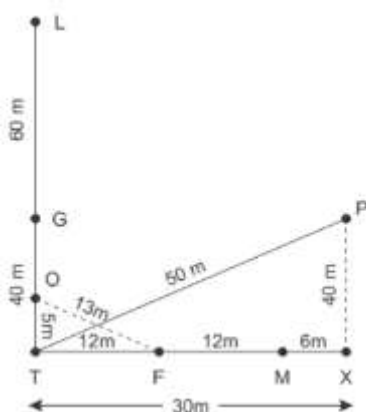
Solution:



If point Y is 6m south of point G then the shortest distance between point C and point Y is 5m.

22. B

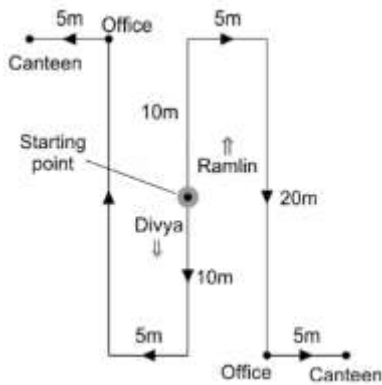
Solution:



Thus clearly using the Pythagoras theorem we can say that the point O is 13m from point F.

23. A

Solution:

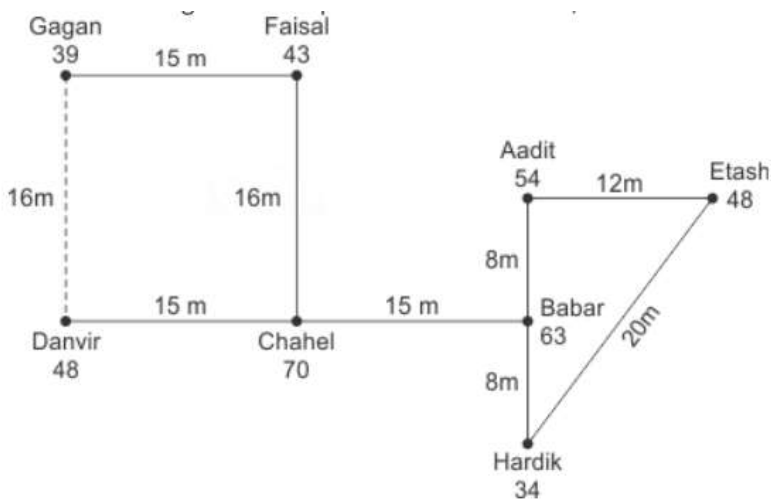


The following common explanation, we get "North-west".

Divya's office is in north-west direction with respect to the starting point.

24. D

Solution:



Following the common explanation, we get "Both Gagan and Hardik".

Faisal scored 43 marks and stands exactly to the east of Gagan

Gagan and Hardik scored 39 and 34 marks respectively i.e. less than 43

25. B

Solution: Following the common explanation, we get "Three".

Etash scored 48 marks and stands exactly to the east of Aadit

Chahel, Babar and Aadit scored 70, 63 and 54 marks respectively i.e. more than 48