

1. **Ajay walked 2m towards east, took a right turn and walked 7m. He, then took a left turn and walked 5m before taking a left turn and walking 7m. He, then took a final right turn and walked 1m before stopping. How far is Ajay from the starting point?**

अजय पूर्व की ओर 2 मी चला, दाएँ मुड़ा और 7 मी चला। वह फिर बाएँ मुड़ा और फिर से बाएँ मुड़कर 7 मी चलने से पहले 5 मी चला। फिर वह अन्त में दाएँ मुड़ा और रुकने से पहले 1 मी चला। अजय आरम्भिक बिन्दु से कितनी दूर है?

(a) 8 m

(b) 7 m

(c) 6 m

(d) 5 m

(e) 9 m

2. In a row of boys, Rajan is 10th from the right and Suraj is 10th from the left. When Rajan and Suraj interchange their positions, Suraj will be 27th from the left. Which of the following will be Rajan's position from the right?

लड़कों की एक पंक्ति में राजन दाएँ से 10वें तथा सूरज बाएँ से 10वें स्थान पर है। जब राजन और सूरज अपने स्थान आपस में बदल लेते हैं, तो सूरज बाएँ से 27वें स्थान पर हो जाता है। बताइए कि स्थान परिवर्तन के बाद राजन दाएँ से कौन-से स्थान पर होगा?

- (a) 10th (b) 26th (c) 29th
(d) 25th (e) None of these

3. **One day, Ravi left home and cycled 10 km Southwards, turned right and cycled 5 km and turned right and cycled 10 km and turned left and cycled 10 km. How many kilometers will he have to cycle in a straight line to reach his home?**

एक दिन रवि घर से चला और 10 किसी दक्षिण की ओर साइकिल चलाई फिर दाएँ मुड़कर 5 किमी साइकिल चलाई और फिर दाएँ मुड़कर 10 किमी साइकिल चलाई और फिर बाएँ मुड़कर 10 किमी साइकिल चलाई। अब उसे अपने घर पहुँचने के लिए एक सीधी रेखा में कितने किमी साइकिल चलानी पड़ेगी?

- (a) 10 (b) 15 (c) 20
(d) 25 (e) None of these

4. **Ram walks 10 m South from his house, turns left and walks 23 m. Again turns left and walks 40 m, then turns right and walks 5 m to reach his school. in which direction is the school from his house?**

राम, अपने घर से 10 मी दक्षिण की ओर चलता है फिर बाएँ मुड़ता है और 23 मी चलता है। वह फिर बाएँ मुड़ता है और 40 मी चलता है। उसके बाद वह दाएँ मुड़ता है और 5 मी चलकर स्कूल पहुँचता है, उसके घर से स्कूल किस दिशा में है?

- (a) East (b) North-East (c) South-West
(d) North (e) North-West

5. Vaibhav starts moving South in the early morning. By Noon he had covered 6 km and was very tired. He rested for a while. When he woke up, he forgot the direction he was travelling with a wild guess he started walking left of his original direction. He walked 8 km and realised his mistake. He started walking homeward. How long will he take to reach home if his speed is 10 km/h ?

(a) $\frac{1}{2}$ h

(b) 1 h

(c) 2 h

(d) 1.5 h

Directions : The following questions are based on the five three digit numbers given below :

192 756 275 643 584

6. **The position of the first and the second digits of each of the numbers are interchanged. What will be the sum of all the three digits of the lowest number thus formed?**

प्रत्येक संख्या के पहले एवं दूसरे अंकों को परस्पर बदल दिया जाता है। इस प्रकार बनी सबसे छोटी संख्या के तीनों अंकों का योग क्या होगा?

(a) 18

(b) 17

(c) 14

(d) 13

(e) 12

Directions : The following questions are based on the five three digit numbers given below :

192 756 275 643 584

- 7. If all the digits in each of the numbers are arranged in ascending order within the number, what will be the difference between the highest and the second highest numbers thus formed?**

यदि प्रत्येक संख्या के अंकों को संख्या के अंदर की आरोही क्रम में व्यवस्थित किया जाए तो इस प्रकार बनी सबसे बड़ी संख्या तथा दूसरी सबसे बड़ी संख्या के बीच कितना अंतर होगा?

(a) 201

(b) 112

(c) 109

(d) 436

(e) 221

Directions : The following questions are based on the five three digit numbers given below :

192 756 275 643 584

8. **What will be the resultant if the second digit of the highest number is divided by the third digit of the lowest number?**

यदि सबसे बड़ी संख्या के दूसरे अंक को सबसे छोटी संख्या के तीसरे अंक से विभाजित किया जाए तो परिणाम क्या आएगा?

(a) 3

(b) 2.5

(c) 3.5

(d) 2

(e) 1

Directions : The following questions are based on the five three digit numbers given below :

192 756 275 643 584

9. **If '2' is added to the third digit of every odd number and '4' is subtracted from the second digit of every even number, in how many numbers thus formed will the second digit be greater than the third digit?**

यदि प्रत्येक विषम संख्या के तीसरे अंक में '2' जोड़ा जाए तथा प्रत्येक सम संख्या के दूसरे अंक में से '4' घटा लिया जाए तो इस प्रकार बनी संख्याओं में से किसमें दूसरा अंक तीसरे अंक से बड़ा होगा?

- (a) Four (b) One (c) Two
(d) Three (e) None

Directions : The following questions are based on the five three digit numbers given below :

192 756 275 643 584

- 10. All the numbers are arranged in ascending order from left to right. What will be the difference between the second digit and the third digits of the number which is third from the left?**

सभी संख्याओं को बाएँ से दाएँ आरोही क्रम में व्यवस्थित किया जाता है। बायीं ओर से तीसरी संख्या के दूसरे अंक तथा तीसरे अंक के बीच कितना अंतर होगा?

(a) 4

(b) 7

(c) 1

(d) 3

(e) 5

Directions : In each of the following questions two equations are given. You have to solve them and give answer

(A) If $p > q$

(B) If $p < q$

(C) If $p = q$

(D) If $p \geq q$

(E) If $p < q$ or the relationship can't be established.

11. **I. $p^2 - 7p - 12$**

II. $q^2 - 3q - 2 = 0$

Directions : In each of the following questions two equations are given. You have to solve them and give answer

(A) If $p > q$

(B) If $p < q$

(C) If $p = q$

(D) If $p \geq q$

(E) If $p < q$ or the relationship can't be established.

12. **I. $12p^2 - 7p - 1 = 0$**

II. $6q^2 - 7q - 2 = 0$

Directions : In each of the following questions two equations are given. You have to solve them and give answer

(A) If $p > q$

(B) If $p < q$

(C) If $p = q$

(D) If $p \geq q$

(E) If $p > q$ or the relationship can't be established.

13. **I.** $p^2 - 12p - 35 = 0$

II. $2q^2 - 22q - 56 = 0$

Directions : In each of the following questions two equations are given. You have to solve them and give answer

(A) If $p > q$

(B) If $p < q$

(C) If $p = q$

(D) If $p \geq q$

(E) If $p > q$ or the relationship can't be established.

14. **I.** $p^2 - 8p - 15 = 0$

II. $q^2 - 5q - 6 = 0$

Directions : In each of the following questions two equations are given. You have to solve them and give answer

(A) If $p > q$

(B) If $p < q$

(C) If $p = q$

(D) If $p \geq q$

(E) If $p > q$ or the relationship can't be established.

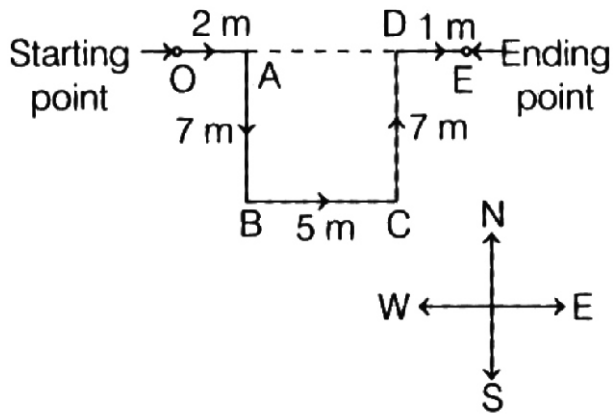
15. **I. $2p^2 - 20p + 50 = 0$**

II. $q^2 = 25$

SOLUTIONS

1. (a)

Ajay's walking directions are as follows



$$OA = 2 \text{ m}, AB = 7 \text{ m}, BC = 5 \text{ m},$$

$$CD = 7 \text{ m}, DE = 1 \text{ m}$$

∴ Required distance (OE)

$$= OA + AD + DE$$

$$= (2 + 5 + 1) \text{ m}$$

$$= 8 \text{ m}$$

2. (5) After interchanging the positions, Suraj will be 27th from the left which is Rajan's earlier position.

∴ Total number of boys

$$= (10 + 27 - 1)$$

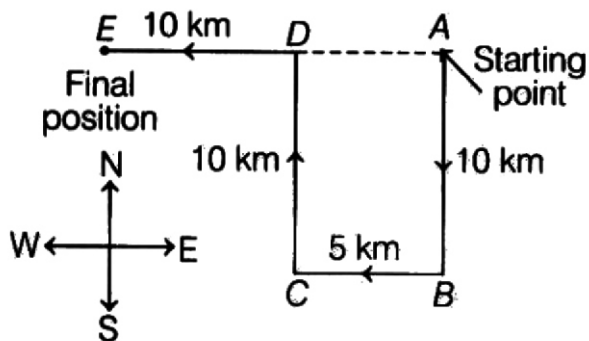
$$= 37 - 1 = 36$$

So, Rajan's position from the right

$$= (36 - 10) + 1$$

$$= 26 + 1 = 27$$

3. (2) According to the question, the direction diagram will be as follows



Now, $AB = DC = 10$ km, $BC = DA$

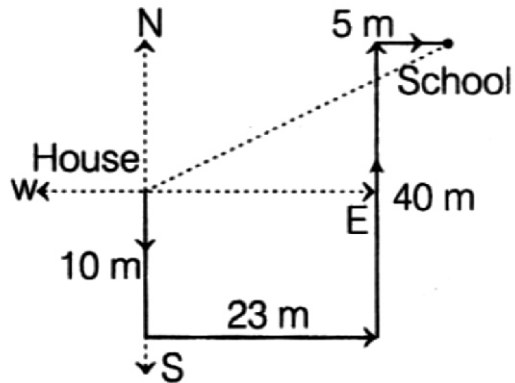
$$= 5 \text{ km, } ED = 10 \text{ km}$$

∴ Required distance,

$$EA = ED + DA$$

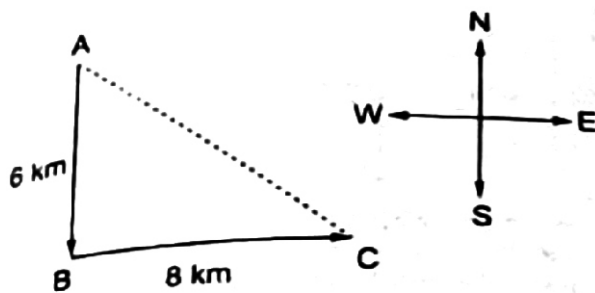
$$= 10 + 5 = 15 \text{ km}$$

4. (2) Direction, as shown by dotted line, is North-East.



The school is in the North-East direction with respect to the house.

5. (b)



$$\begin{aligned}AC &= \sqrt{6^2 + 8^2} \\AC &= \sqrt{100} = 10 \text{ km} \\ \text{Time} &= \frac{\text{Distance}}{\text{Speed}} \\ T &= \frac{10}{10} = 1 \text{ h}\end{aligned}$$

6. (d) 192 912

756 576

275 725

643 463

584 854

The lowest number = 463

Required sum = 4 + 6 + 3 = 13

7. (c) 192 129

756 567

275 257

643 346

584 458

Highest number 567

Second highest number 458

Required difference

= 567 - 458 = 109

8. (e) Highest number 756

Its second digit 5

Lowest number 275

Its third digit 5

Required resultant = $\frac{5}{5} = 1$

9. (b) 192 152

756 716

275 277

643 645

584 544

In 152, the second digit is the greater than the third digit.

10. (a) Ascending order of numbers :

$192 < 275 < 584 < 643 < 756$

Required difference = $8 - 4 = 4$

11. I. p^2 7p 12

$$\text{or, } p^2 - 7p + 12 = 0$$

$$\text{or, } (p - 3)(p - 4) = 0$$

$$\text{or, } p = 3 \text{ or } 4$$

$$\text{II. } q^2 - 3q + 2 = 0$$

$$\text{or, } (q - 2)(q - 1) = 0$$

$$\text{or, } q = 1 \text{ or } 2$$

Hence, } p = q

$$12. \text{ I. } 12p^2 - 7p + 1 = 0$$

$$\text{or, } 12p^2 - 7p + 1 = 0$$

$$\text{or, } (3p - 1)(4p - 1) = 0$$

$$\text{or, } p = \frac{1}{4} \text{ or } \frac{1}{3}$$

$$\text{II. } 6q^2 - 7q + 2 = 0$$

$$\text{or, } (3q - 2)(2q - 1) = 0$$

$$\text{or, } q = \frac{1}{2} \text{ or } \frac{2}{3}$$

Hence, } q = p \text{ or } p = q

13. I. $p^2 - 12p + 35 = 0$

or, $(p - 7)(p - 5) = 0$

or, $p = 7$ or, 5

II. $2q^2 - 22q + 56 = 0$

or, $q^2 - 11q + 28 = 0$

or, $(q - 7)(q - 4) = 0$

or, $q = 7$ or 4

From the above values, we are unable to find the relationship between p and q .

14. I. $q^2 - 11q + 28 = 0$

or, $(q - 3)(q - 5) = 0$

or, $q = 3$ or 5

II. $q^2 - 5q + 6 = 0$

or, $(q - 2)(q - 3) = 0$

or, $q = 2$ or 3

Hence, $p \neq q$

15. I. $2p^2 - 20p + 50 = 0$

or, $p^2 - 10p + 25 = 0$

or, $(p - 5)^2 = 0$

or, $p = 5$

II. $q^2 = 25$

or, $q = 5$

Hence, $p = q$.