

# FIITJEE INTERNAL MOCK TEST-2

for

## *Mukhyamantri Vigyan Pratibha Pariksha*

### (All Class IX Batches)

# (MAT)

*Time: 120 Minutes*

*Maximum Marks: 100*

**Please read the instructions carefully.**

### INSTRUCTIONS

**A: General :**

1. Immediately fill in the particulars on this page of the Test Booklet with Blue/Black Ball point pen.
2. Use **Blue/Black Ball Point Pen only** for writing particulars on **Side-1** and **Side-2** of the Answer Sheet. **Use of pencil is strictly prohibited.**
3. Darken the appropriate bubbles with **HB Pencil** only.
4. Blank papers, clipboards, log tables, slide rules, calculators, cellular phones, pagers and electronic gadgets in any form are not allowed.
5. The answer sheet, a machine-gradable Objective Response Sheet (ORS) is provided separately.
6. Do not Tamper/mutilate the **ORS** or this booklet.
7. No additional sheets will be provided for rough work
8. On completion of this test, the candidate must hand over the Answer Sheet to the Invigilator on duty in the Room/Hall. **However, the candidates are allowed to take away this Test Booklet with them.**

**B: Questions paper format and Marking Scheme :**

1. The question paper consists of 100 questions.
2. For each question you will be **awarded 1 mark** if you darken the bubble corresponding to the correct answer and zero mark if no bubbles is darkened or your response is incorrect.

**Enrollment No. :** **Batch :** \_\_\_\_\_

**Name :** \_\_\_\_\_

**Candidate's Signature** \_\_\_\_\_ **Invigilator's Signature:** \_\_\_\_\_

**MVPP-Mock Test-2-MAT**

1. In a row of boys, Rajan is tenth from the right and Suraj is tenth from the left. When Rajan and Suraj interchange positions, Suraj will be twenty –seventh from the left. What will be Rajan's positions from the right?  
(A) Twenty sixth (B) Twenty seventh  
(C) Twenty eight (D) Twenty Ninth

1. **B**

2. In a row of boys, Jeevan is seventh from the start and eleventh from the end. In another row of boys, Vikas is tenth from the start and twelfth from the end. How many boys are there in both the rows together?  
(A) 36 (B) 37  
(C) 39 (D) 38

2. **D**

Sol. In first row 17 boys and in 2<sup>nd</sup> row 21 boys are there. So, in total 38 boys are there.

**Directions (Questions 3 – 4):** There questions are based on the following number series:

7 8 9 7 6 5 3 4 2 8 9 7 2

3. How many 8s are preceded by an even number and followed by an odd number?  
(A) 0 (B) 1  
(C) 2 (D) 3

3. **B**

Sol. 7 8 9 7 6 5 3 4 2 8 9 7 2

4. Which digit has the highest frequency?  
(A) 7 (B) 2  
(C) 8 (D) 9

4. **A**

Sol. 7 is coming three times in the series.

5. In a row of 40 students Shekhar is seventeenth from right and then what will be Shekhar's position from left?  
(A) 22 (B) 23  
(C) 24 (D) 28

5. **C**

Sol. Shekhar's position from left =  $(40 - 17) + 1 = 24$

6. Atul is seventeenth rank above to Susheel who is thirty from the top in the row of 50 students. Then what will be the position of Atul from bottom?  
(A) 36 (B) 37  
(C) 38 (D) 39

6. **C**

Sol. Atul's rank = seventeenth rank above Susheel = 13  
Atul's position from bottom =  $(50 - 13) + 1 = 38$

7. In a row of 35 students Rakesh when shifted by six places towards right, then he becomes eighteenth from right. Then what was Rakesh's previous position from left before shifting?  
(A) 10 (B) 13  
(C) 12 (D) 11

7. **C**

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Sol. Rakesh's position before shifting = 24<sup>th</sup> from right.  
So, Rakesh, position from left =  $(35 - 24) + 1 = 12$

8. Raju is seventh from left and Rohan is ninth from right. If there are six students between them, then how many students are there in the row?  
(A) 8 (B) 10  
(C) 22 (D) 21

8. C  
Sol. 6 Raju 6 Rohan 8  
Total students = 22

9. Ram is eighth from left and he is fourth to the left of Shyam who is eighth from right. Then how many students are there in the row?  
(A) 12 (B) 19  
(C) 24 (D) 20

9. B  
Sol. 7 Ram 3 Shyam 7  
Total students = 19

10. Amit is seventeenth from left and Sumit is fourteenth from right in the row of 50 students and Ankit is sitting just exactly in between them. Then what will be Ankit's position from right end.  
(A) 24 (B) 19  
(C) 18 (D) 15

10. A  
Sol. 16 Amit 9 Ankit 9 Sumit 13  
Ankit's position from right = 24.

11. Anuj is fourteenth from left and Raj is eighteenth from right. When they interchange their positions respectively, then Anuj becomes twenty third from left. What will be Raj from right after interchanging?  
(A) 25 (B) 26  
(C) 27 (D) 28

11. C  
Sol. Before interchanging → 13 Anuj \_\_\_ Raj 17  
After interchanging → 13 Raj 8 Anuj 17  
After interchanging Raj's position from right = 27.

**Directions (Questions 12 – 13):** In a row of boys and girls Radha is sixth from the top and Atul is twelfth from top. Radha is fourth from the top and sixth from bottom among girls. Atul is seventh from the top and twenty fourth from bottom among boys.

12. How many children are there in the row?  
(A) 41 (B) 39  
(C) 48 (D) 49

12. B  
Sol.

Boys	Girls	Combined
6 boys	3 girls	6 boys, 5 girls
Atul	Radha	Atul
23 boys	5 girls	4 girls, 23 boys

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13. How many girls are sitting below Atul?  
(A) 15 (B) 4  
(C) 16 (D) 18

13. B  
Sol. Number of girls below Atul = 4

14. In a row of boys, if A who is tenth from the left and B who is ninth from the right if they interchange their positions, A becomes fifteenth from the left. How many boys are there in the row?  
(A) 23 (B) 27  
(C) 28 (D) 31

14. A  
Sol. Before interchanging: 9 A    B 8  
After interchanging: 9 B 4 A 8  
Total boys in row = 23.

15. In a class of 60, where girls are twice that of boys, Kamal ranked seventeenth from the top. If there are 9 girls ahead of Kamal, how many boys are after him in rank?  
(A) 3 (B) 7  
(C) 12 (D) 23

15. C  
Sol. Total girls = 40  
Total boys = 20  
16 students are ahead of Kamal and of them 9 are girls and 7 are boys.  
So, 12 boys will be after Kamal in rank.

16. In a row of 40 girls, when Komal was shifted to her left by 4 places, her place from the left end of the row became 10. What is the position of Swati from the right end of the row, if Swati was three places to the right of Komal's original position?  
(A) 22 (B) 23  
(C) 25 (D) 24

16. D  
Sol. On shifting 4 places to the left, Komal is 10<sup>th</sup> from the left end of the row. Thus, Komal's original position was 14<sup>th</sup> from the left end.  
Swati is 3 places to the right of Komal's original position. Clearly, Swati is 17<sup>th</sup> from the left end.  
Now, Swati's position from right = (Total number of girls – Swati's position from left) + 1  
= 40 – 17 + 1 = 23 + 1 = 24  
So, Swati is 24<sup>th</sup> from the right end of the row.

17. There are 35 students in a class. Suman ranks third among the girls in the class. Amit ranks 5<sup>th</sup> among the boys in the class. Suman is one rank below Amit in the class. No, two students hold the same rank in the class. What is the Amit's rank in the class?  
(A) 7<sup>th</sup> (B) 5<sup>th</sup>  
(C) 8<sup>th</sup> (D) Cannot be determined

17. A  
Sol. Suman ranks 3<sup>rd</sup> in the class among the girls.  
Amit ranks 5<sup>th</sup> among the boys.  
Suman comes one rank after Amit in the class.  
It means two girls and four boys rank higher than Amit in the class.  
So, Amit ranks 7<sup>th</sup> in the class.

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18. In a row of children facing North, Ritesh is 12<sup>th</sup> from the left end. Sudhir, who is 22<sup>nd</sup> from the right end is 4<sup>th</sup> to the right of Ritesh. Total how many children are there in the row?  
(A) 35 (B) 36  
(C) 37 (D) 34

18. C  
Sol. Sudhir's position from left =  $(12 + 4) = 16^{\text{th}}$  from left  
Clearly, there are three students between Ritesh and Sudhir.  
 $\therefore$  Total number of children =  $(12 + 3 + 22) = 37$

19. In a class of 45 students, a boy is ranked 20<sup>th</sup>. When two boys joined, his rank was dropped by one. What is his new rank from the end?  
(A) 25<sup>th</sup> (B) 26<sup>th</sup>  
(C) 27<sup>th</sup> (D) 28<sup>th</sup>

19. C  
Sol. Total number of boys after 2 new boys joined = 47  
Since, the rank of the boy dropped by 1, it became 21<sup>st</sup> 20<sup>th</sup>  
 $\therefore$  His new rank from the end =  $47 - 20 + 1 = 27^{\text{th}}$

20. P, Q, R and S are four males. P is the eldest in the group but he is not the poorest, R is the richest but not the eldest, Q is elder than S but he is not elder than P or R, P is richer than Q but he is not richer than S. How the four persons can be arranged in decreasing order of their age and money?  
(A) PQRS, RPSQ (B) PRQS, RSPQ  
(C) PRQS, RSQP (D) PRSQ, RSPQ

20. B  
Sol. Decreasing order (agewise)  
 $P > R > Q > S$   
Decreasing order (moneywise)  
 $R > S > P > Q$

21. Tannu is elder than Nimu. Dinu is elder than Nimu but younger than Tannu. Lalli is younger than both Nimu and Hari but Hari is younger than Nimu. Who is the youngest?  
(A) Tannu (B) Nimu  
(C) Dinu (D) Lalli

21. D  
Sol. According to the question:  
Tannu > Nimu  
Tannu > Dinu > Nimu  
Nimu > Hari > Lalli  
On arranging the above data, we get  
Tannu > Dinu > Nimu > Hari > Lalli  
Hence, Lalli is the youngest.

**Directions (Questions 22 – 23):** These questions are based on the following data.  
Five persons – A, B, C, D and E are being compared in weight and height. The second heaviest person D, is the shortest. A is the 2<sup>nd</sup> tallest and shortest than E. The heaviest person is the third tallest. There is only one person shorter than D, who is lighter than E and A respectively.

22. Who is the heaviest person?  
(A) A (B) B  
(C) C (D) D

22. C

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Sol. A is the second tallest person. There is only one person shorter than B. So, B is the fourth tallest person. D is the shortest and second heaviest.

	Weight	Height
1.		
2.	D	A
3.		
4.		B
5.		D

A is shorter than E. So, the third tallest person is C, who is the heaviest person. B is lighter than E and A respectively. So, the final arrangement is as follows.

	Weight	Height
1.	C	E
2.	D	A
3.	E	C
4.	A	B
5.	B	D

C is heaviest person.

23. What is the position of A in height and weight respectively?

- (A) 2<sup>nd</sup>, 4<sup>th</sup> (B) 4<sup>th</sup>, 3<sup>rd</sup>  
(C) 2<sup>nd</sup>, 1<sup>st</sup> (D) 5<sup>th</sup>, 3<sup>rd</sup>

23. A

Sol. A is the second tallest and the fourth heaviest person.

**Directions (Questions 24):** Each of the following questions below consist of a question and two statements numbered I and II given below. You have to decide whether the data provided in the statements are sufficient to answer the question.

Give answer.

(A) if the data in Statement I alone are sufficient to answer the question, while the data in Statement II alone are not sufficient to answer the question

(B) if the data in Statement II alone are sufficient to answer the question, while the data in Statement I alone are not sufficient to answer the question

(C) if the data either in Statement I alone or Statement II alone are sufficient to answer the question

(D) if the data in both the Statements I and II are together necessary to answer the question

24. On what day of the week does Aarti's birthday fall?

I. Monu correctly remembers that Aarti's birthday comes after Wednesday but before Sunday.

II. Sohan correctly remembers that Aarti's birthday comes before Friday but after Tuesday

24. D

Sol. According to Monu, birthday = Thursday / Friday / Saturday

According to Sohan, birthday = Wednesday / Thursday

∴ Required day of birthday = Thursday

So, both statements are required

**Directions (Questions 25 – 26):** Each of the question below consist of a question and three statements numbered I, II and III given below it. You have to decide whether the data provided in the statement are sufficient to answer the question.

25. Among P, Q, R, S and T, Q is the second tallest and S is immediate taller than the shortest. Who among them is in the middle when they stand in the order of their heights?

I. T is not the shortest.

II. R is taller than S but shorter than Q.

III. P ranks third in height above S when all are arranged in the order of height.

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- (A) Only I and II  
(C) Only II

- (B) Either II only or I and III only  
(D) Only II and III

25. B

Sol. Form the given statement, the descending order of heights is: \_\_\_\_, Q, \_\_\_\_, S, \_\_\_\_  
From II, we have the order: \_\_\_\_, Q, R, S, \_\_\_\_\_. Thus, R is in the middle.  
From III, we have the order: P, Q, \_\_\_\_, S, \_\_\_\_\_. But, according to I, T is not shortest. So, R is the shortest. Thus, we have the order : P, Q, T, S, R. So, T is in the middle.

26. Four subjects – Physics, Chemistry, Mathematics and Biology – were taught in four consecutive periods of one hour each starting from 8.00 am. At what time was the Chemistry period scheduled?

- I. Mathematics period ended at 10.00 am, which was preceded by Biology.  
II. Physics was scheduled in the last period.  
III. Mathematics period was immediately followed by Chemistry

- (A) Only I  
(B) Either I only or II only  
(C) Only II and III  
(D) Only I and either II or III

26. D

Sol. From I and II, we conclude that Mathematics period began at 9.00 am. Biology period began at 8.00 am and Physics period began at 11 am. So, the chemistry period began at 10.00 am  
From I and III, we conclude that Mathematics period ended and chemistry period began at 10.00 am.

**Directions (Questions 27 – 28):** Each of the question below consists of a question and two statements numbered I and II given below. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements.

Give answer:

- (A) if the data in Statement I alone are sufficient to answer the question, while the data in Statement II alone are not sufficient to answer the question  
(B) if the data in Statement II alone are sufficient to answer the question, while the data in Statement I alone are not sufficient to answer the question  
(C) if the data either in Statement I alone or in Statement II alone are sufficient to answer the question  
(D) if the data given in both Statements I and II together are not sufficient to answer the question.

27. Is X an odd number?

- I. X is multiplied by an odd number then result is an odd number.  
II. X is not divisible by 2.

27. C

Sol. Statement I alone is sufficient as an odd number when multiplied by another odd number results in an another odd number. Statement II is clear definition of odd number.

28. How many marks has Shekhar scored in the test? (maximum marks 20)

- I. Shekhar scored two digit marks. His marks were not in decimals.  
II. Shekhar scored more than 9 marks in the test.

28. D

Sol. Statement I is clearly insufficient and Statement II is insufficient as Shekhar can get any marks between 9 and 20.

Even statement (I + II) both are clearly insufficient.  
So, both statements are insufficient to answer the question.

**Directions (Questions 29 – 30):** Each of the questions given below consists of a question and two statements numbered I and II. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements.

Give answer:

- (A) If the data in statement I alone are sufficient to answer the questions, while the data in statement II alone are not sufficient to answer the question.  
 (B) If the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question  
 (C) If the data either in statement I alone or in statement II alone are sufficient to answer the question.  
 (D) if the data given in both the statements I and II together are not sufficient to answer the question.

29. Lal is taller than Nand, Jim is taller than Harry. Who among them is the tallest?  
 I. Jim is taller than Nand.  
 II. Lal is taller than Harry.

29. D

Sol. Given that Lal > Nand  
                     Jim > Harry  
 From statement I, Jim > Harry / Nand  
 And Lal > Nand  
 But no comparison is given between Lal and Jim.  
 Hence, statement I alone is insufficient  
 From statement II, Lal > Harry / Nand  
 Also, Jim > Harry  
 But again no comparison is given between Lal and Jim.  
 Hence, II alone is also insufficient.  
 Even it is very obvious from statement I and II that they are together insufficient to answer the question.

30. Out of 64 students, 38 play both chess and cricket. How many students play only chess?  
 I. Out of 64 students, 22 students do not play any game 4 students play only cricket.  
 II. Out of 64 students, 20 are girls and 10 of them do not play any game.

30. A

Sol. From statement I, out of 64, 4 students play only cricket.  
 So, remaining  $64 - 4 = 60$  and 22 students do not play any game.  
 $\therefore$  Remaining students =  $60 - 22 = 38$   
 Now, according to the statement 38 play both chess and cricket. So, none plays chess only.  
 Hence, statement I alone is sufficient.  
 From statement II out of 64, 10 do not play any game, so remaining  $64 - 10 = 54$  and according to the statement 38 play both chess and cricket.  
 So, finally, we have to find the number of students who play only cricket which is not given.  
 So, we cannot determine the number of students who play only chess.  
 Hence, statement II alone is insufficient.  
 So, statement I alone is sufficient to answer the question.

**Directions (Questions 31 – 32):** Consider the letters of the alphabet written in the order from left to right i.e., from A to Z.

31. The letter which is fourth to the left of the letter, which is fifth to the right of F is  
 (A) C (B) W  
 (C) E (D) G

31. D

Sol. A B C D E F G H I J K L M



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N O P Q R S T U V W X Y Z  
5<sup>th</sup> letter to the right of F is K. Fourth letter to the left of K is G.

32. The letter which is 6<sup>th</sup> to the left of the letter which is 8<sup>th</sup> to the right of P is  
(A) E (B) D  
(C) S (D) R

32. D

Sol. The letter which is 8<sup>th</sup>, to the right of P is X. The 6<sup>th</sup> letter to the left of X is R.

**Directions (Questions 33 – 35):** Study the following information carefully and answer the given questions. The following is an illustration of input and rearrangement. (All the numbers given in the arrangement are two digit numbers)

Input 'gone over 35 69 test 72 park 27'

Step I 27 gone over 35 69 test 72 park

Step II 27 test gone over 35 69 72 park

Step III 27 test 35 gone over 69 72 park

Step IV 27 test 35 park gone over 69 72

Step V 27 test 35 park 69 gone over 72

Step VI 27 test 35 park 69 over gone 72

Step VII 27 test 35 park 69 over 72 gone

and Step VII is the last step of the rearrangement of the above input.

As per the rules followed in the above steps, find out in each of the following questions the appropriate step for the given input.

33. Input '86 open shut door 31 49 always 45'. How many steps will be required to complete the rearrangement?  
(A) Five (B) Six  
(C) Seven (D) Four

33. B

Sol. Input 86 open shut door 31 49 always 45

Step I 31 86 open shut door 49 always 45

Step II 31 shut 86 open door 49 always 45

Step III 31 shut 45 86 open door 49 always

Step IV 31 shut 45 open 86 door 49 always

Step V 31 shut 45 open 49 86 door always

Step VI 31 shut 45 open 49 door 86 always

∴ Total steps = six

34. Step II of an input is 18 win 71 34 now if victory 61. How many more steps will be required to complete the rearrangement?  
(A) Three (B) Four  
(C) Five (D) Six

34. B

Sol. Step II 18 win 71 34 now if victory 61

Step III 18 win 34 71 now if victory 61

Step IV 18 win 34 victory 71 now if 61

Step V 18 win 34 victory 61 71 now if

Step VI 18 win 34 victory 61 now 71 if

As last step = Step VI

So, after Step II four more steps are required.

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35. Input 'where 47 59 12 are they going 39'. Which of the following steps will be last but one?  
(A) VII (B) III  
(C) V (D) VIII

35. B

Sol. Input where 47 59 12 are they going 39  
Step I 12 where 47 59 are they going 39  
Step II 12 where 39 47 59 are they going  
Step III 12 where 39 they 47 59 are going  
Step IV 12 where 39 they 47 going 59 are  
∴ Last but one step = Step III

**Directions (Q.36 – Q.37):** A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in each step. The following is an illustration of an input and rearrangement.

Input: 17 put short on 39 27 84 gain  
Step I: short 17 put on 39 27 84 gain  
Step II: short 84 17 put on 39 27 gain  
Step III: short 84 put 17 on 39 27 gain  
Step IV: short 84 put 39 17 on 27 gain  
Step V: short 84 put 39 on 17 27 gain  
Step VI: short 84 put 39 on 27 17 gain  
Step VII: short 84 put 39 on 27 gain 17  
and Step VII is the last step of the rearrangement of the above input.

As per the rules followed in the above steps, find out in each of the following questions the appropriate step for the given input.

36. Input: glass fine 15 37 watch not 85 65  
Which of the following will be step VI of the above input?  
(A) watch 85 not 65 fine glass 15 37 (B) watch 85 not 65 glass fine 15 37  
(C) watch 85 not 65 glass 37 fine 15 (D) There will be no such step.

36. D

37. Step II of an input is : ultra 73 16 kite sort 39 32 mail  
Which of the following steps will be the last step?  
(A) VIII (B) IX  
(C) VII (D) VI

37. C

**Directions (38 to 41): Study the following information carefully and answer the given questions:**

A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.

**Input :** quick fire 15 28 39 war 19 yellow

**Step I :** yellow quick fire 15 28 39 war 19

**Step II :** yellow 15 quick fire 28 39 war 19

**Step III:** yellow 15 war quick fire 28 39 19

**Step IV:** yellow 15 war 19 quick fire 28 39

**Step V :** yellow 15 war 19 quick 28 fire 39

And Step V is the last step of the above input.

As per the rules followed in the above steps, find out in each of the following questions the appropriate step for the given input.

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38. Step II of an input is : zebra 12 bank carriage 46 31 29 dusk  
Which of the following steps will be the last but one ?  
(A) V (B) VI (C) VII (D) VIII

38. A

39. Input : age die 72 53 35 hold goal 26  
How many steps will be required to complete the rearrangement?  
(A) Four (B) Five (C) Six (D) Seven

39. C

40. Step II of an input is : win 12 92 for 81 always 36 home  
Which of the following will be Step VII ?  
(A) win 12 home 36 92 for 81 always (B) win 12 home 36 for 92 always 81  
(C) win 12 home 92 for 81 always 36 (D) None of these

40. D

41. Step III of an input is : train 23 star 61 32 fall hard 53  
Which of the following is definitely the input?  
(A) 23 star 61 train 32 fall hard 53 (B) star train 61 23 32 fall hard 53  
(C) 61 star 23 train 32 fall hard 53 (D) Cannot be determined

41. D

42. The salaries of A, B, C are in the ratio 2 : 3 : 5. If the increments of 15%, 10% and 20% are allowed respectively in their salaries, then what will be the new ratio of their salaries?  
(A) 3 : 3 : 10 (B) 10 : 11 : 20  
(C) 23 : 33 : 60 (D) Cannot be determined

42. C

Sol. Required ratio = 23 : 33 : 60

43. If  $5x^2 - 13xy + 6y^2 = 0$ , then  $x : y$  is  
(A) 2 : 1 only (B) 3 : 5 only  
(C) (5 : 3) or (1 : 2) (D) (3 : 5) or (2 : 1)

43. D

Sol. Given  $5x^2 - 13xy + 6y^2 = 0$   
 $5x^2 - 10xy - 3xy + 6y^2 = 0$   
 $5x(x - 2y) - 3y(x - 2y) = 0$   
 $x = 2y$ ,  $5x = 3y$   
 $\frac{x}{y} = \frac{2}{1}$ ,  $\frac{x}{y} = \frac{3}{5}$

44. 'x' varies inversely as square of y. Given that  $y = 2$  for  $x = 1$ . The value of x for  $y = 6$  will be equal to :  
(A) 3 (B) 9  
(C) 1/3 (D) 1/9

44. D

Sol.  $x \propto \frac{1}{y^2}$

$$\Rightarrow x = \frac{k}{y^2}$$

Given,  $x = 1, y = 2$

$$\text{So, } 1 = \frac{k}{4} \Rightarrow k = 4$$

$$\text{So, } x = \frac{4}{y^2}$$

$$x = \frac{4}{36} = \frac{1}{9}$$

45. A number 42 is divided into two parts in the ratio 3:4. Find the number which is sum of the squares of the two parts.  
 (A) 700 (B) 900  
 (C) 650 (D) 980

45. B  
 Sol. Total parts of the ratio = 3:4 = 3 + 4 = 7

$$\text{First part} = \frac{3}{7} \times 42 = 18$$

$$\text{Second part} = \frac{4}{7} \times 42 = 24$$

$$\therefore \text{Required number} = (18)^2 + (24)^2 \\ = 324 + 576 = 900$$

46. Find the fraction which shall bear the same ratio to  $\frac{1}{27}$  that  $\frac{8}{11}$  does to  $\frac{5}{9}$ .  
 (A)  $\frac{6}{163}$  (B)  $\frac{7}{192}$   
 (C)  $\frac{8}{165}$  (D)  $\frac{6}{142}$

46. C

$$\text{Sol. } x \times \frac{5}{9} = \frac{1}{27} \times \frac{8}{11}$$

$$x = \frac{1}{27} \times \frac{8}{11} \times \frac{9}{5} = \frac{8}{165}$$

47. A profit of Rs 84 is divided between A and B in the ratio of  $\frac{1}{3} : \frac{1}{4}$ . What will be the difference of their profits?  
 (A) Rs 12 (B) Rs 14  
 (C) Rs 10 (D) Rs 8

47. A

Sol.  $\frac{1}{3} : \frac{1}{4}$  is the same as  $1 \times 4 : 1 \times 3$  i.e., 4 : 3

$$\text{Share of A} = \frac{4}{7} \times \text{Rs. } 84 = \text{Rs. } 48$$

$$\text{Share of B} = \frac{3}{7} \times \text{Rs. } 84 = \text{Rs. } 36$$

$$\text{Difference} = \text{Rs } 48 - \text{Rs } 36 = \text{Rs } 12$$

48. Three equal glasses are filled with a mixture of milk and water. The proportion of milk to water in each glass is as follows. In the first glass 1:2, in the second as 2:3 and in the third 3:4. The contents of the three glasses are emptied into a single vessel. What is the proportion of milk and water into it?  
 (A) 122:193 (B) 122:195  
 (C) 122:194 (D) 122:196

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48. A

Sol. Let the capacity of each glass be 1 litre.

Quantity of milk in the vessel

$$= \left( \frac{1}{3} + \frac{2}{5} + \frac{3}{7} \right) \text{ litres}$$

$$= \frac{35 + 42 + 45}{105} = \left( \frac{122}{105} \right) \text{ litres}$$

Quantity of water in the vessel

$$= \left( \frac{2}{3} + \frac{3}{5} + \frac{4}{7} \right) \text{ litres}$$

$$= \frac{40 + 63 + 60}{105} = \left( \frac{193}{105} \right) \text{ litres}$$

∴ Required ratio = 122:193

49. What number should be subtracted from each of the numbers 54, 71, 75 and 99. so that the remainders may be proportional.

(A) 2

(B) 3

(C) 5

(D) 7

49. B

Sol. If x be the number, then 54 - x, 71 - x, 75 - x and 29 - x are in proportion.

$$\Rightarrow (54 - x)(99 - x) = (71 - x)(75 - x)$$

$$\Rightarrow 5346 - 153x + x^2 = x^2 - 146x + 5325$$

$$\Rightarrow x = 3$$

50. Rs.1000 is given to A, B and C in some ratio. A is wrongly given double and C is wrongly given half, which is Rs. 500 and Rs. 250 respectively. How much is given to B?

(A) 500

(B) 250

(C) 750

(D) None of above

50. B

Sol. Amount with A = 250

Amount with C = 500

So, Amount with B = 250

51. There are three sections A, B and C in a school of class XII. The ratio of the students in sections A and B is 3:5 and that in B and C is 4:7. If the total number of students in the class XII be 134. How many students are there in the section A?

(A) 23

(B) 26

(C) 25

(D) 24

51. D

Sol. A : B = 3 : 5 and B : C = 4 : 7

$$A : B : C = 3 \times 4 : 4 \times 5 : 5 \times 7$$

$$= 12 : 20 : 35$$

Number of students in section A

$$= \frac{12}{12 + 20 + 35} = \frac{12}{67} \times 134 = 24$$

52. If RIR is coded as IRI then MUM is coded as

(A) NFN

(B) UMU

(C) UNU

(D) MFM

52. B

**MVPP-Mock Test-2-MAT**

Sol. Extreme comes at middle while middle comes at the extreme. Hence, UMU is the correct answer.

53. If FAST is coded as 798 and LAST is coded as 906 then BUSY is coded as  
 (A) 1759 (B) 1431  
 (C) 952 (D) 948

53. B

Sol.  $FAST = (6^2 + 1^2 + 19^2 + 20^2) = 798$   
 $LAST = (12^2 + 1 + 19^2 + 20^2) = 906$   
 $BUSY = (2^2 + 21^2 + 19^2 + 25^2) = 1431$

**Directions (Questions 54 – 57):** A code language has been used to write the words in capital letters English in Column I as Greek letters in Column II. Greek letters in Column II do not appear in the same order as letters in Column I. Decode the language and choose the correct code for the word given in each question from amongst the alternatives provided.

Column I	Column II
CLEAR	γ βωπθ
VIEW	νεγδ
TURN	ηρπσ
BUTTER	σρασπγ
OILY	δλθμ
WRITE	γπσνδ
VOWEL	νλεγθ

54. LIVER  
 (A) νηλμπ (B) δγθπε  
 (C) ρσωεν (D) αβδγη

54. B

Sol. 

Column I	Column II
CLEAR	γ βωπθ
VIEW	νεγδ
TURN	ηρπσ
BUTTER	σρασπγ
OILY	δλθμ
WRITE	γπσνδ
VOWEL	νλεγθ

**After decoding we get:**

T → σ	R → π
E → γ	N → η
U → ρ	O → λ
L → θ	Y → μ
W → ν	B → α
I → δ	C → β or ω
V → ε	A → β or ω

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55. TROUBLE  
(A) ναβδγηλ (B) νσωδγθε  
(C) δηγηλωεν (D) σλρπαγθ

55. D

Sol.	Column I	Column II
	CLEAR	γ βωπθ
	VIEW	νεγδ
	TURN	ηρπσ
	BUTTER	σρασπγ
	OILY	δλθμ
	WRITE	γπσνδ
	VOWEL	νλεγθ

After decoding we get:

T → σ	R → π
E → γ	N → η
U → ρ	O → λ
L → θ	Y → μ
W → ν	B → α
I → δ	C → β or ω
V → ε	A → β or ω

56. BROWN  
(A) ωενλω (B) ωδπρν  
(C) απλην (D) πρβνε

56. C

Sol.	Column I	Column II
	CLEAR	γ βωπθ
	VIEW	νεγδ
	TURN	ηρπσ
	BUTTER	σρασπγ
	OILY	δλθμ
	WRITE	γπσνδ
	VOWEL	νλεγθ

After decoding we get:

T → σ	R → π
E → γ	N → η
U → ρ	O → λ
L → θ	Y → μ
W → ν	B → α
I → δ	C → β or ω
V → ε	A → β or ω

57. CYCLE  
 (A) βθγμβ (B) βμβνπ  
 (C) πρπεω (D) πλβνπ

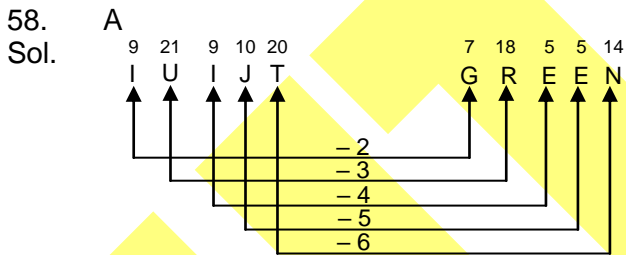
57. A

Sol.	Column I	Column II
	CLEAR	γ βωπθ
	VIEW	νεγδ
	TURN	ηρπσ
	BUTTER	σρασπγ
	OILY	δλθμ
	WRITE	γπσνδ
	VOWEL	νλεγθ

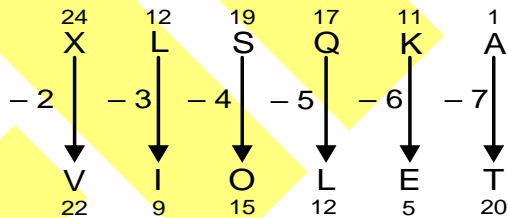
After decoding we get:

T → σ	R → π
E → γ	N → η
U → ρ	O → λ
L → θ	Y → μ
W → ν	B → α
I → δ	C → β or ω
V → ε	A → β or ω

58. In a particular code, 'IUIJT' means 'GREEN'. What does XLSQKA mean in the same code?  
 (A) VIOLET (B) ORANGE  
 (C) INDIGO (D) PURPLE



Similarly,



59. In a certain language 'how many goals scored' is written as 5397, 'many more matches' is written as 982 and 'he scored five' is written as '163'. How is 'goals' written in that code language?  
 (A) 5 (B) 7  
 (C) 5 or 7 (D) Data inadequate

59. C

Sol.	how <u>many</u> goals scored = 5 3 <u>9</u> 7	...i
	<u>many</u> more matches = <u>9</u> 8 2	... ii
	he <u>scored</u> five = 1 6 3	...iii
	from eq. i and ii	



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many  $\Rightarrow$  9 ...iv  
 from eq. i and iii  
 scored  $\Rightarrow$  3 ...v  
 using eq. iv and v in eq. i, we get  
 goals  $\Rightarrow$  5 or 7

60. Each consonant in the word 'TIRADES' is replaced by the previous letter and each vowel is replaced by the next letter in the English alphabet and the new letters are rearranged alphabetically which of the following will be the fourth from the right end?  
 (A) F (B) J  
 (C) Q (D) C

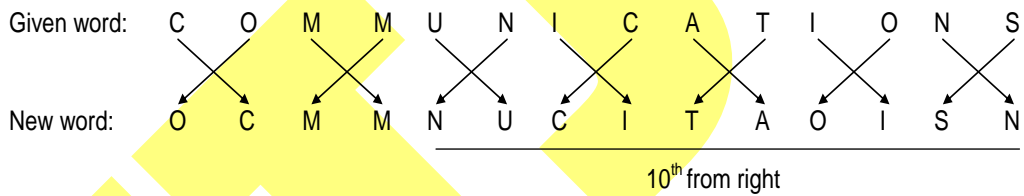
60. B

Sol. Original word: T I R A D E S  
 I. Change S J Q B C F R  
 II. Change B C F J Q R S

61. If the first and second letters in the word 'COMMUNICATIONS' were interchanged, also the third and the fourth letters, the fifth and sixth letters, and so on. Which letter would be the tenth letter counting from your right?  
 (A) U (B) A  
 (C) T (D) N

61. D

Sol. According to the question



Hence, required letter is N.

62. If it is possible to make a meaningful word with the 1<sup>st</sup>, 4<sup>th</sup>, 7<sup>th</sup> and 11<sup>th</sup> letters of the word 'INTERPRETATION', which of the following will be the third letter of that word? If more than one such word can be made, give 'M' as the answer and if no such word can be formed, give 'X' as the answer.  
 (A) T (B) X  
 (C) R (D) M

92. D

Sol. Two meaningful words are RITE and TIRE can be formed

63. 8 children and 12 men complete a certain piece of work in 9 days. If each child takes twice the time taken by a man to finish the work, in how many days will 12 men finish the same work?  
 (A) 10 days (B) 14 days  
 (C) 12 days (D) 8 days

63. C

Sol. If each child takes twice the time taken by a man, 8 children = 4 men.  
 $\therefore$  8 children + 12 men = 16 man do the work in 9 days.  
 $\therefore$  12 men finish the work in  $\frac{9 \times 16}{12} = 12$  days

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64. If 1 man or 2 women or 3 boys can do a piece of work in 44 days, then the same piece of work will be done by 1 man, 1 woman and 1 boy in \_\_\_ days.  
 (A) 21 days (B) 30 days  
 (C) 15 days (D) 24 days

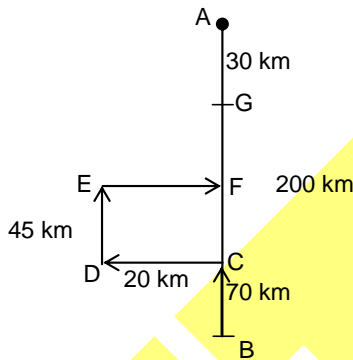
64. D

Sol. 1 man = 2 women = 3 boys  
 $\therefore$  1 man + 1 woman + 1 boy = 3 boys +  $\frac{3}{2}$  boys + 1 boy =  $11\frac{1}{2}$  boys.  
 Now, 3 boys do the work in 44 days.  
 $\therefore$   $11\frac{1}{2}$  boys do the work in  $\frac{44 \times 3}{11} \times 2 = 24$  days

65. Two friends P and Q started walking towards each other starting from points A and B respectively, which are 200 km apart. On a straight road P traveled for 30 km on road and stopped. Q traveled for 70 km, and took a left turn and traveled 20 km. Then he took right turn and traveled 45 km and then turned to the main road and reached it. What is the distance, in km, between the friends now?  
 (A) 45 (B) 55  
 (C) 65 (D) 75

65. B

Sol.

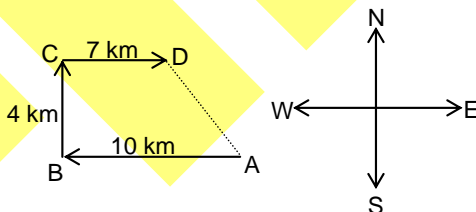


Now P is at position G and Q is at F.  
 $GF = AB - (AG + BC + CF) = 200 - (30 + 70 + 45) = 55$  km

66. Mr. Powar travels 10 km towards west and turns right to travel 4 km. Now he turns right and travels 7 km. In which direction is he now with respect to the starting position?  
 (A) South - East (B) South - West  
 (C) North - East (D) North - West

66. D

Sol.



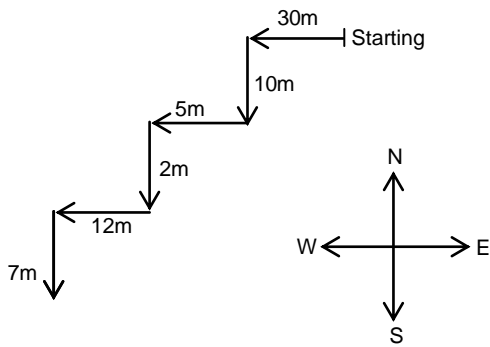
Now, D is to the North - West of A.

67. My dog Boxer, runs 30 m towards west, turns left and runs 10 m, then turns right, and runs 5 m, then turns left and runs 2 m and again turns right, runs 12 m. Finally it turns left and runs 7 m. In which direction is it running now?  
 (A) East (B) West  
 (C) North (D) South

67. D

**MVPP-Mock Test-2-MAT**

Sol.

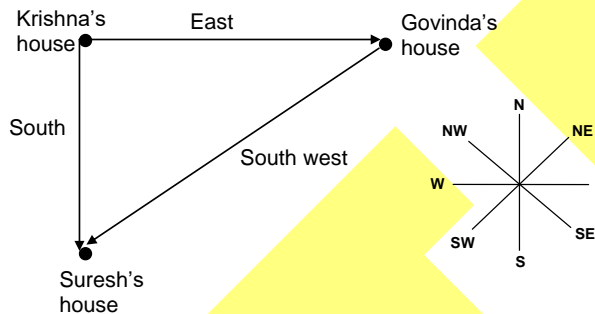


From the diagram, the dog is running towards South.

68. If Suresh's house is located to the south of Krishna's house and Govinda's house is to the East of Krishna's house, in what direction Suresh's house situated with respect to Govinda's house?  
 (A) north east (B) north west  
 (C) south east (D) south west

68. D

Sol. According to the question, the direction diagram will be as follows:

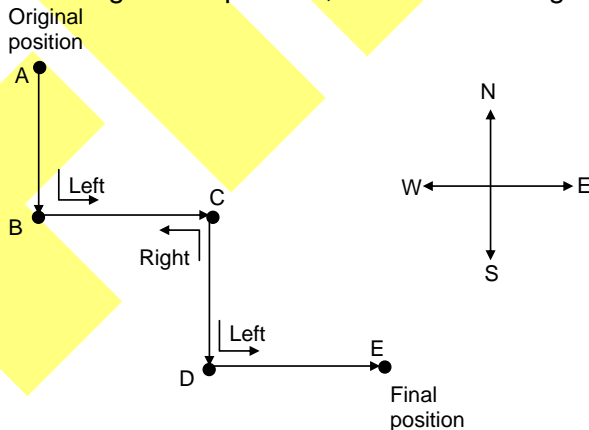


Clearly, Suresh's house is to the south west of Govinda's house.

69. A boy first goes in south direction, then he turns towards left and travels for some distance. After that he turns right and moves certain distance. At last he turns left and travels again for some distance. Now, in which direction is he moving?  
 (A) south (B) west  
 (C) east (D) north

69. C

Sol. According to the question, the direction diagram will be as follows.

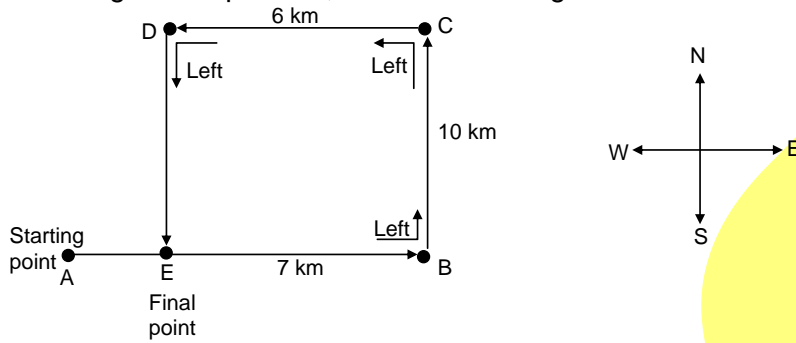


Clearly, boy is moving towards east.

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70. Mohan started from a point A and proceeded 7 km straight towards east, then he left and proceeded straight for a distance of 10 km. He, then turned left again and proceeded straight for a distance of 6 km and then turned left again and proceeded straight for another 10 km. In which direction is Mohan from his starting point?  
 (A) East (B) West  
 (C) North (D) South

70. A  
 Sol. According to the question, the direction diagram is as follows:

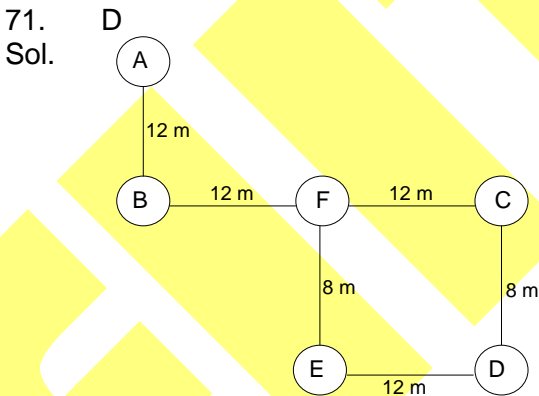


Clearly, Mohan is toward east from the starting point.

**Directions (Questions 71 – 72):** Study the following information carefully to answer the given questions.

Point B is 12 m South of point A. Point C is 24 m East of point B. Point D is 8 m South of point C. Point D is 12 m East of point E and point F is 8 m North of point E.

71. If a man has to travel to point E from point A (through these points by the shortest distance), which of the following points will he pass through first?  
 (A) Point C (B) Point D  
 (C) Point F (D) Point B



72. If a man is standing facing North at point C, how far and in which direction is point F?  
 (A) 12 m, West (B) 24 m, East  
 (C) 12 m, East (D) 24 m, West

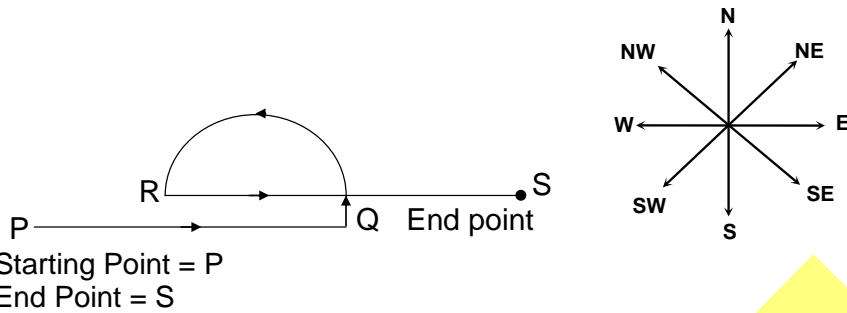
72. A  
 Sol. The point F is 12 m west to point C.

73. A river flows west to east and on the way turns left and goes in a semi – circle round a hillock, and then turns left at right angles. In which direction the river is finally flowing?  
 (A) West (B) East  
 (C) North (D) South

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73. B

Sol. From the below figure, it is clear that the river flows eastwards from P towards Q. Then turns left and follows a semi – circular path to reach R where it again turns left and finally flows towards S i.e., eastwards.

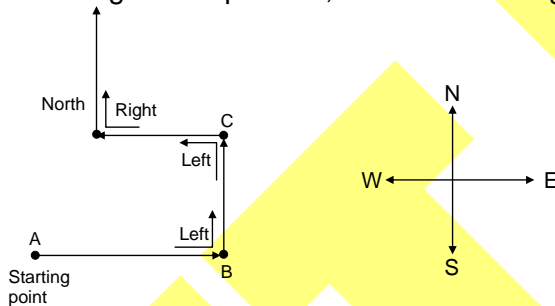


74. Parmila is going towards East. She turns left, walks for some distance and again turns to her left. After walking some distance she turns to her right and moves on. In which direction she is going now?

- (A) North
- (B) South
- (C) North west
- (D) West

74. A

Sol. According to the question, the direction diagram is as follows:



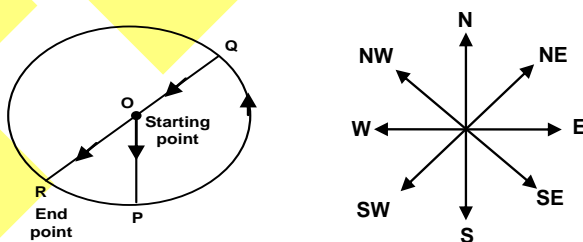
Clearly, Parmila is moving towards North.

75. I am standing at the centre of a circular field. I go down South to the edge of the field and then turning the left I walk along the boundary of the field equal to three eights of its length. Then, I turn left and go right across to the opposite point on the boundary. In which direction am I from the starting point?

- (A) North west
- (B) North
- (C) South west
- (D) West

75. C

Sol. According to the question, the direction diagram will be as follows

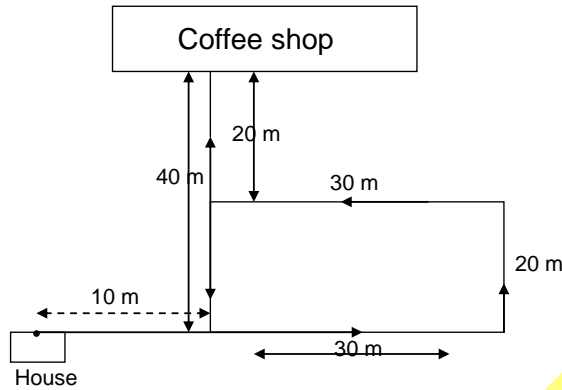


From the above diagram, it is clear that I am in the south west direction from the starting point.

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76. Immediately after leaving his house, Hareesh turned right and walked for 40 m. Then, he turned left and walked for 20 m. Then, he again took a left turn and walked for 30 m. There he met a friend and turned right to go to the coffee shop 20 m away. After having coffee, he walked back straight for 40 m in the direction he had come from. How far is he from his house?  
 (A) 20 m (B) 0 m  
 (C) 10 m (D) 40 m

76. C  
 Sol.



∴ Required distance = 40 – 30 = 10 m

77. A can do a piece of work in 20 days and B can do it in 15 days. How long will they take if both work together?  
 (A)  $8\frac{6}{7}$  days (B)  $8\frac{4}{7}$  days  
 (C)  $9\frac{3}{7}$  days (D) None of these

77. B

78. In question 77 if C, who can finish the same work in 25 days, joins them, then how long will they take to complete the work?  
 (A)  $6\frac{18}{47}$  days (B) 12 days  
 (C)  $2\frac{8}{11}$  days (D)  $47\frac{6}{18}$  days

78. A

79. A man takes 6 hours 35 minutes in walking to a certain place and riding back. He would have taken 2 hours less by riding both ways. What would be the time he would take to walk both ways?  
 (A) 4 hours 35 minutes (B) 8 hours 35 minutes  
 (C) 10 hours (D) 8 hours 25 minutes

79. B

80. If 6 men and 8 boys can do a piece of work in 10 days and 26 men and 48 boys can do the same in 2 days, the time taken by 15 men and 20 boys to do the same type of work will be:  
 (A) 5 days (B) 4 days  
 (C) 6 days (D) 7 days

80. B

**MVPP-Mock Test-2-MAT**

81. A train travelling at 36 km ph completely passes in 12 seconds, another train half its length, travelling in the opposite direction at 54 km ph. If it also passes a railway platform in  $1\frac{1}{2}$  minutes. What is the length of the platform (in metres)?  
 (A) 700 metres (B) 800 metres  
 (C) 900 metres (D) 1000 metres

81. A

Sol. Relative speed of the two trains =  $36 + 54$  i.e., 90 km/h

$$\text{Distance traveled in 12 seconds} = \left(90 \times \frac{5}{18} \times 12\right) \text{m}$$

i.e., the length of the both the trains = 300 m

$$\text{The length of the first train} = \frac{2}{3} \times 300 = 200 \text{ m}$$

Distance traveled by the second train 90 seconds

$$= \left(36 \times \frac{5}{18} \times 90\right) = 900 \text{ m}$$

$$\therefore \text{Length of the platform} = 900 - 200 = 700 \text{ m}$$

82. I walk to a town at  $5\frac{1}{2}$  km per hour and ride back on a cycle at  $27\frac{1}{2}$  km/hr. What is my average speed in km/hr for the whole journey?

- (A)  $9\frac{1}{6}$  km (B)  $16\frac{1}{2}$  km  
 (C)  $10\frac{1}{2}$  km (D) none of these

82. A

Sol. Using the rule  $\frac{2xy}{x+y}$

$$\text{Average speed} = \left( \frac{2 \times 5\frac{1}{2} \times 27\frac{1}{2}}{5\frac{1}{2} + 27\frac{1}{2}} \right) \text{ km/hr}$$

$$= \left( 2 \times \frac{11}{2} \times \frac{55}{2} \times \frac{1}{33} \right) \text{ km/hr}$$

$$= 9\frac{1}{6} \text{ km/hr}$$

83. A boat travels upstream from B to A and down stream form A to B in 3 hours. If the speed of the boat in still water is 9 km/hr and the speed of the current is 3 km/hr, the distance between A and B is?

- (A) 10 km (B) 11 km  
 (C) 12 km (D) 13 km

83. C

Sol. Down rate =  $(9 + 3)$  km i.e., 12 km/hr

Uprate =  $(9 - 3)$  km i.e., 6 km / hr

$$\Rightarrow \frac{x}{6} + \frac{x}{12} = 3 \text{ or } x = 12$$

$\therefore$  Distance AB = 12 km

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84. A water tank of 1000 liters capacity is connected to a tap which can fill it at the rate of 20 litres per minute and water is let out at the same time at the rate of 5 liters per minute. After an hour the outlet is shut off. Find how long will it take now for the tank to become full?  
 (A) 3 minutes (B) 5 minutes  
 (C) 4 minutes (D) 6 minutes

84. B

Sol. Water filled in the tank in 60 minutes =  $20 \times 60$  liters  
 Water let out from the tank in 60 minutes =  $5 \times 60$  liters  
 Remaining water left in the tank = 1200 liters – 300 liters  
 = 900 liters  
 Remaining space in the tank = 1000 liters – 900 liters = 100 liters  
 Time taken to fill up 100 liters water =  $100 \div 20 = 5$  minutes

85. Two guns were fired from the same place at an interval of 10 minutes and 30 seconds, but a person in the train approaching the place hears the second shot 10 minutes after the first. The speed of the train (in km/hr), supposing that sound travels at 330 metres per second, is:  
 (A) 19.8 (B) 58.6  
 (C) 59.4 (D) 111.80

85. C

Sol. Let the speed of the train be  $x$  m / sec. Then,  
 Distance traveled by the train in 10 min = Distance traveled by sound in 30 seconds.  
 $\Leftrightarrow x \times 10 \times 60 = 330 \times 30 \Leftrightarrow x = 16.5$

$$\therefore \text{Speed of the train} = 16.5 \text{ m / sec} = \left( 16.5 \times \frac{18}{5} \right) \text{ km/hr} = 59.4 \text{ km / hr}$$

86. Pipes A and B can fill a tank in 5 and 6 hours respectively. Pipe C can empty it in 12 hours. If all the three pipes are opened together, then the tank will be filled in:  
 (A)  $1\frac{13}{17}$  hours (B)  $2\frac{8}{11}$  hours  
 (C)  $3\frac{9}{17}$  hours (D)  $4\frac{1}{2}$  hours

86. C

87. A person travels equal distances with speeds of 3 km/hr, 4 km/hr and 5 km/hr and takes a total time of 47 minutes. The total distance (in km) is:  
 (A) 2 (B) 3  
 (C) 4 (D) 5

87. B

88. The speed of a boat in still water is 15 km/hr and the rate of current is 3 km/hr. The distance traveled downstream in 12 minutes is:  
 (A) 1.2 km (B) 1.8 km  
 (C) 2.4 km (D) 3.6 km

88. D

89. A is thrice as efficient as B and is, therefore, able to finish a piece of work 10 days earlier than B. In how many days A and B will finish it together?  
 (A)  $3\frac{1}{2}$  days (B)  $3\frac{4}{5}$  days  
 (C)  $3\frac{3}{4}$  days (D)  $3\frac{7}{8}$  days



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89. C

Sol. According to the conditions. A does the work in 5 days. B in 15 days. Together they will do in  $3\frac{3}{4}$  days.

90. A and B can do a piece of work in 28 days, with the help of C they can finish it in 21 days. How long will C take a finish it?

- (A) 60 days (B) 84 days  
(C) 42 days (D) 75 days

90. B

Sol. C's 1 day work =  $\frac{1}{21} - \frac{1}{28} = \frac{4-3}{84} = \frac{1}{84}$   
∴ C can do it in 84 days.

91. B can do a piece of work in 6 hours, B and C do it in 4 hours and A, B and C in  $2\frac{2}{3}$  hours. In how many hours can A and B do that work?

- (A) 11 hours (B)  $6\frac{1}{7}$  hours  
(C)  $2\frac{3}{7}$  hours (D)  $3\frac{3}{7}$  hours

91. D

Sol. (B + C)'s 1 hour work =  $\frac{1}{4}$   
(A+B+C)'s 1 hour work =  $1 \div \left(2\frac{2}{3}\right) = \frac{3}{8}$   
∴ A's 1 hour work =  $\frac{3}{8} - \frac{1}{4} = \frac{1}{8}$   
(A+B)'s 1 hour work =  $\frac{1}{8} + \frac{1}{6} = \frac{7}{24}$

92. A, B and C can complete a work separately in 24, 36 and 48 days respectively. They started together but C left after 4 days to start and A left 3 days before the completion of the work. In how many days will the work be completed?

- (A) 15 days (B) 22 days  
(C) 25 days (D) 35 days

92. A

Sol. (A + B + C)'s 1 day's work =  $\left(\frac{1}{24} + \frac{1}{36} + \frac{1}{48}\right) = \frac{13}{144}$

Work done by (A + B + C) in 4 days =  $\left(\frac{13}{144} \times 4\right) = \frac{13}{36}$

Work done by B in 3 days =  $\left(\frac{1}{36} \times 3\right) = \frac{1}{12}$ . Remaining work =  $\left[1 - \left(\frac{13}{36} + \frac{1}{12}\right)\right] = \frac{5}{9}$

(A + B)'s 1 day's work =  $\left(\frac{1}{24} + \frac{1}{36}\right) = \frac{5}{72}$

Now,  $\frac{5}{9}$  work is done by A and B in  $\left(\frac{72}{5} \times \frac{5}{9}\right) = 8$  days

Hence, total time taken = (4 + 3 + 8) days = 15 days

**MVPP-Mock Test-2-MAT**

93. Three pipes A, B and C can fill a tank in 6 hours. After working at it together for 2 hours, C is closed and A and B can fill the remaining part in 7 hours. The number of hours taken by C alone to fill the tank is:  
 (A) 10 (B) 12  
 (C) 14 (D) 16

93. C

Sol. Part filled in 2 hours =  $\frac{2}{6} = \frac{1}{3}$ , Remaining part =  $\left(1 - \frac{1}{3}\right) = \frac{2}{3}$

$\therefore (A + B)$ 's 7 hour's work =  $\frac{2}{3}$ ;  $(A + B)$ 's 1 hour's work =  $\frac{2}{21}$

$\therefore$  C's 1 hour's work =  $[(A + B + C)$ 's 1 hour's work  $- (A + B)$ 's 1 hour's work]

=  $\left(\frac{1}{6} - \frac{2}{21}\right) = \frac{1}{14}$

$\therefore$  C alone can fill the tank in 14 hours.

94. If 'SKY WAS BLUE' is 123  
 'SEA IS BLUE' is 245  
 'PEOPLE SWIMMING IN SEA' is 4678  
 'PEOPLE LIKE SKY' is 801 and  
 'BIRDS IN SKY' is 169. Then 'PEOPLE LIKE BIRDS' will have the number.

- (A) 809 (B) 104  
 (C) 036 (D) 806

94. A

Sol. Blue  $\rightarrow$  2  
 Sky  $\rightarrow$  1  
 Was  $\rightarrow$  3  
 People  $\rightarrow$  8  
 Like  $\rightarrow$  0  
 In  $\rightarrow$  6  
 Birds  $\rightarrow$  9  
 'People like birds'  $\rightarrow$  809

95. In a certain code language, DIAMOND is written as EMPLBHE. How will ROUTINE be written in that code language?

- (A) FMJSVNS (B) FOJUVPS  
 (C) FMJVSSN (D) SNVSJMF

95. A

Sol. DIAMOND  $\rightarrow$  DNOMAID  

D	N	O	M	A	I	D
+1↓	-1↓	+1↓	-1↓	+1↓	-1↓	+1↓
E	M	P	L	B	H	E

 Similarly for ROUTINE.

96. If MY = 16, SUN = 27 then HOTEL will be equal to:

- (A) 60 (B) 75  
 (C) 77 (D) 80

96. B

Sol. MY = 16  
 SUN = 27  
 Adding positions from back, we get the number

MVPP-Mock Test-2-MAT

$$\text{HOTEL} = 19 + 12 + 7 + 22 + 15 = 75$$

97. If 'water' is called 'air', 'air' is called 'tree', 'tree' is called 'sky', 'sky' is called 'sea' and 'sea' is called 'fire', where do aeroplanes fly?  
(A) water (B) sky  
(C) fire (D) sea

97. D  
Sol. Aero planes fly in the sky, answer is sea.

**Direction: (Q.98 to Q.99):** Some equations are solved on the basis of a certain system. On the same basis, find out the correct answer, from amongst the four alternatives, for the unsolved equation.

98. If  $9 * 7 = 32$ ,  $11 * 5 = 96$ , then  $17 * 9 = ?$   
(A) 160 (B) 175  
(C) 208 (D) 280

98. C  
Sol.  $9 * 7 = 32 \Rightarrow (9+7) \times (9-7) = 32$   
 $11 * 5 = 96 \Rightarrow (11+5) \times (11-5) = 96$   
 $\therefore \text{Answer} = (17+9) \times (17-9) = 208$

99.  $85 \times 14 = 44$ ,  $68 \times 28 = 64$ ,  $79 \times 45 = ?$   
(A) 72 (B) 83  
(C) 96 (D) 124

99. B  
Sol.  $(8 \times 5) + (1 \times 4) = 44$   
 $(6 \times 8) + (2 \times 8) = 64$   
Similarly,  
 $(7 \times 9) + (4 \times 8) = 83$

100. Some translated words in an artificial Language (in which the word order is not necessarily same) are given below  
mie pie sie                      good person sing  
pie sie rie                        sing good lyrics  
tie rie sie                         love good lyrics  
What is the translation for 'person love lyrics'?  
(A) pie tie rie (B) tie rie sie  
(C) rie mie tie (D) sie mie pie

100. C  
Sol. mie pie sie  $\rightarrow$  good person sing ...I  
pie sie rie  $\rightarrow$  sing good lyrics ...II  
tie rie sie  $\rightarrow$  love good lyrics ...III  
From e.q. I to III  
Good  $\rightarrow$  sie  
Sing  $\rightarrow$  pie  
Person  $\rightarrow$  mie  
Lyrics  $\rightarrow$  rie  
Love  $\rightarrow$  tie  
Person love lyrics  $\rightarrow$  mie tie rie

