Bipin Nambiar
(SBI PO 2018)

Shiraz Khan
(SBI Clerk 2018)

Kuldeep Yadav
(SBI PO 2018)

Rajat Saxena
(IBPS Clerk 2018)

Anupam Tyagi
(IBPS PO 2018)

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Smartkeeda
The Question Bank

Machine Input Output Questions for IBPS PO Pre, LIC AAO, RBI Assistant, SBI PO Pre and other Competitive Exams

Directions(1-5): 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: variety 35 spices 21 for 79 good 54 taste 46
Step I: for variety 35 spices 21 79 good 54 taste 46
Step II: good for variety 35 spices 79 54 taste 46 21
Step III: taste good for variety 35 spices 54 46 21 79
Step IV: spices taste good for variety 54 46 21 79 35
Step V: variety spices taste good for 46 21 79 35 54
Step V is the last step.

Find the various steps and final output for the input given below.
Input: Strong 64 relations 25 depends 38 on 53 base 45

1. Which of the following represents the fifth element from left end in step IV and fourth element from right end in step II respectively?

A. relation -38
B. 25 - 53
C. relation - base
D. relation - 53
E. None of these

2. What is the difference of the odd numbers that come between 'strong' and 'base' in step I?

A. Only one odd number comes in between
B. 14
C. 28
D. No odd number comes in between
E. Can't be determined

3. With respect to the step V, Four of the following five are alike in a certain way and thu form a group. Which of the following does not belong to that group?

A. 38
B. base
C. depends
D. 53
E. 45

4. Which of the following elements is third to the left of fourth element from right end in step III?

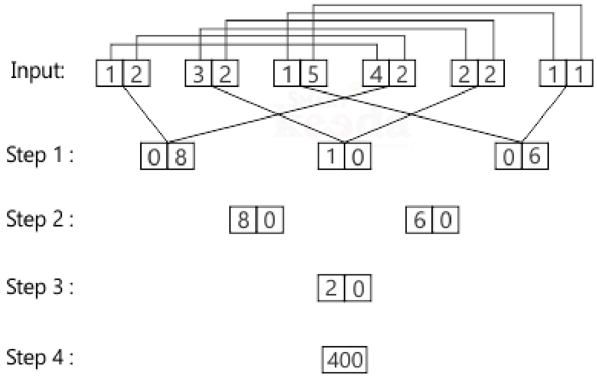
A. 53
B. relation
C. base
D. depends
E. None of these

5. What is the sum of the numbers that are towards the right of 'base' in step I?

A. 109
B. 102
C. 91
D. There is only one number
E. None of these

Directions(6-10): Read the given information carefully and answer the questions given beside:

The first step is the resultant of the product and sum of the digits in input as per the lines indicated. Further steps are obtained by applying certain logic. Numbers of step II have been obtained by using at least 1 digit of each number in step 1. Each step is a resultant of previous step.



5. Which one of the following is half of the value obtained in final step?

A. 151250
B. 142870
C. 160080
D. 202500
E. None of these

7. Which one of the following is a number obtained in step II?

A. 1550
B. 1650
C. 1200
D. 1100
E. None of these

8. Find the difference of the numbers obtained in step II?

A. 660
B. 550
C. 630
D. 420
E. None of these

9. Which one of the following is one of the numbers obtained in step I ?

A. 32
B. 44
C. 56
D. 50
E. None of these

10. Which one of the following is the required final step?

A. Step V
B. Step VI
C. Step IV
D. Step VII
E. None of these

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Directions(11-14): Study the following information carefully and answer the questions given beside.

Input: 781 vsskt 651 ltsk 486 deef 351 jklm 581 tuvw
Step 1: 351 781 vsskt 651 ltsk 486 jklm 581 tuvw deef
Step 2: 651 351 781 vsskt ltsk 486 581 tuvw deef jklm
Step 3: 581 651 351 781 vsskt 486 tuvw deef jklm ltsk
Step 4: 781 581 651 351 vsskt 486 deef jklm ltsk tuvw
Step 5: 486 781 581 651 351 deef jklm ltsk tuvw vsskt

Step 5 is the final step
As per the pattern followed in the above steps, find out for given input:
Input: 555 cat 651 dog 481 gold 231 modi 631 ruchi

11. In which step we will get the following output?
651 631 555 231 481 modi ruchi cat dog gold.

A. Step 5
B. Step 4
C. Step 3
D. There is no such step
E. None of these

12. If in step 4 '651' is related to '231' & '555' is related to 'cat', then following the same pattern '631' is related to ______________

A. ruche
B. 231
C. 555
D. cat
E. gold

13. Which of the following statements is correct regarding position of 'ruchi' in the 4th step?

A. Third to left 651
B. Second to right of gold
C. Second to right of 631
D. Second to right of 231
E. Second to left of gold

14. In step 5 which of following word or number is 3rd to the right of the word/number which is 2nd to the right of '651'?

A. modi
B. gold
C. cat
D. 555
E. 231

Directions(15-19): A word and number arrangement machine when given an input line of words and numbers rearranges them following a different rule in each step. The following is an illustration of input and rearrangement.

Input: always begin from bottom mount high
Step I: aabdho eimty inou ggnooy gmnou isst
Step II: 3 44 31 23 2 49
Step III: 48 18 72
Step IV: 3 9
Step V: 144

Step V is the last step of the arrangement.
Following the same pattern solve the given input.
Input: fear creates demons only hope defeat

15. What will be the value obtained in final step of the arrangement?

A. 36	B. 26	C. 81
D. 49	E. 72	

16. What is the product of the numbers obtained in step IV?

A. 36	B. 16	C. 24
D. 18	E. 12	

17. Which of the following numbers will represent 'Fear' in step II?

A. 36	B. 38	C. 25
D. 20	E. 18	

18. Which of the following words will be obtained in step I?

A. aeit	B. aeefhix	C. ehmmow
D. bmop	E. aeeguw	

19. What is the sum of the numbers obtained in step III?

A. 108	B. 282	C. 96
D. 42	E. 216	

Directions(20-24): A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in every step. The following is an illustration of input and rearrangement.

Input: 79 create history 88 imagined 94 every 63 leader 96
Step I: 88 79 create history imagined 94 63 leader 96 every
Step II: 88 79 96 history imagined 94 63 leader every create
Step III: 88 79 96 history imagined 94 63 every create leader
Step IV: 88 79 96 94 imagined 63 every create leader history
Step V: 88 79 96 94 63 every create leader history imagined
Step V is the last step of the arrangement.

Following the same pattern solve the given input.
Input: never 42 leaved 39 important object 53 46 anyplace 74

20. How many steps will be required to complete the given input?

A. Three	B. Seven	C. Six
D. Five	E. Four	

21. Which of the following steps will be last but one of the given input?

A. 39 74 46 53 important 42 never leaved object anyplace
B. 39 74 46 53 42 important never leaved object anyplace
C. 39 74 46 42 53 never leaved object anyplace important
D. 39 74 46 53 42 important never object leaved anyplace
E. None of these

22. Which of the following will be on the immediate right of 'Important' in step III?

A. Object	B. Never	C. 42
D. Anyplace	E. 53	

23. How many element(s) will be there between '74' and 'leaved' in Step IV?

A. Six	B. Four	C. Four
D. Five	E. Three	

24. What is the position of 'Object' in step V?

A. Third from right end	B. Second from left end	C. Seventh from left end
D. Fourth from right end	E. None of these	

Directions(25-29): 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: faster 24 and 37 rapid 61 progressive 18 requirement 85 building 93
Step I: 24 faster and 37 rapid 61 progressive 18 requirement 85 building 93
Step II: 24 progressive faster and 37 rapid 61 18 requirement 85 building 93
Step III: 24 progressive 61 faster and 37 rapid 18 requirement 85 building 93
Step IV: 24 progressive 61 requirement faster and 37 rapid 18 85 building 93
Step V: 24 progressive 61 requirement 18 faster and 37 rapid 85 building 93
Step VI: 24 progressive 61 requirement 18 building faster and 37 rapid 85 93
Step VII: 24 progressive 61 requirement 18 building 37 faster and rapid 85 93
Step VIII: 24 progressive 61 requirement 18 building 37 faster 93 and rapid 85
Step IX: 24 progressive 61 requirement 18 building 37 faster 93 rapid and 85
Step X: 24 progressive 61 requirement 18 building 37 faster 93 rapid 85 and
Step X is the final output.

Find the different steps of output using the above mentioned logic for the following input.
Input: technology 47 transfer 26 rate 72 achieving 51 extra 91 version 32

25. How many steps are needed to reach the final output?

A. Ten
B. Nine
C. Eight
D. Eleven
E. None of these

26. Which of the following is fourth to the left of '47' in step VI?

A. version
B. 51
C. transfer
D. 26
E. 91

27. In which of the following steps "version 91 47 rate" is seen in the same sequence?

A. Step IX
B. Step VIII
C. Both A or B
D. Step VII
E. None of these

28. Which of the following comes exactly between 51 and 91 in step III?

A. rate
B. 26
C. extra
D. 72
E. None of these

29. Which of the following is seventh from the right end in final output?

A. transfer
B. achieving
C. extra
D. 72
E. None of these

Directions(30-34): 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: name 72 nest 24 near 35 nostalgic 43 narrow 67
Step1: 72 nest near 35 nostalgic 43 narrow 67 name 242
Step2: 72 nest near nostalgic 43 67 name 242 narrow 335
Step3: 72 nest nostalgic 67 name 242 narrow 335 near 343
Step4: 72 nostalgic name 242 narrow 335 near 343 nest 367
Step5: name 242 narrow 335 near 343 nest 367 nostalgic 722

Step 5 is the final output.
Find the different steps of output using the above mentioned logic for the following input.
Input: team 55 taboo 48 tackle 83 tissue 69 test 11.

30. In which of the following steps, 'taboo' is placed at third from the left end?
A. Step 1
B. Input
C. Step 4
D. Either A or B
E. None of these

31. Which of the following is the final output?
A. taboo 311 tackle 482 test 355 team 369 tissue 383
B. taboo 311 tackle 482 team 355 test 369 tissue 383
C. tissue 383 taboo 311 tackle 482 team 355 test 369
D. tackle 482 team 355 test 369 tissue 383 taboo 311
E. None of these

32. What is the difference between the highest and the lowest numbers of step 3?
A. 268
B. 316
C. 393
D. 413
E. None of these

33. Which of the following elements is second to the left of fourth element from the right end in step 2?
A. 83
B. tissue
C. 69
D. test
E. None of these

34. In which of the following steps "83 tissue taboo" is seen in the same sequence?
A. Step 4
B. Step 5
C. Step 3
D. Both Step 3 and step 4
E. None of these

Directions(35-39): An alphanumeric machine accepts letters as input and delivers output in form of numbers through different steps. Each step is obtained by applying an operation different from the previous step. Each step gives output taking input from the previous step. Below mentioned is an illustration of the same.

Input: spread joy laughter by sharing smile with masses
Step1: 9 2 11 5 6 4 7 9
Step2: 99 10 42 36
Step3: 57 26
Step4: 5

Step4 is the final output.
On the basis of above illustration find the output and different steps for the following input.
Input: being good to everyone sometimes invite sad trouble

35. If '3' is added to one of the values of step 3 then what would be its consequence on the final output?

A. Final output will remain indifferent
B. Final output will be decreased by 2
C. Final output will be decreased by 1
D. Final output will be increased by 2
E. Final output will be increased by 1

36. What is the square of the sum of the numbers of step 3?

A. 729
B. 676
C. 784
D. 529
E. None of these

37. If in the given input 'sad' is replaced by "so" then which of the following values of step 2 will change?

A. 20
B. 16
C. 77
D. 54
E. None of the values will change

38. Four of the following are similar in a certain way and thus form a group. Which of the following does not belong to the group?

A. 22
B. 1
C. 55
D. 3
E. 10

39. What is the difference between the sum of all the even numbers of step 2 and the sum of all the odd numbers of step 3?

A. 77
B. 85
C. 67
D. 46
E. 38

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Directions(40-44): 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: Fable 76 Quibble 24 Terrible 54 Able 82 Gamble 65
Step1: 82 Fable 76 Quibble 24 Terrible 54 Gamble 65 Able
Step2: Fable 82 76 Quibble 24 Terrible 54 Gamble Able 65
Step3: 76 Fable 82 Quibble 24 Terrible 54 Able 65 Gamble
Step4: Quibble 76 Fable 82 Terrible 54 Able 65 Gamble 24
Step5: 54 Quibble 76 Fable 82 Able 65 Gamble 24 Terrible

Step 5 is the final output.
Find the different steps of output using the above mentioned logic for the following input.
Input: Scientific 29 Majaestic 34 Fantastic 58 Hectic 77 Genetic 84

40. What is the position of '58' in step 1?
A. Fifth from the left end
B. Sixth from the right end
C. Seventh from the left end
D. Fifth from the right end
E. None of the above

41. In the final output, how many elements are there between the greatest and the smallest numbers of the given arrangement?
A. Four
B. Two
C. Three
D. Five
E. None of the above

42. What is the sum of the numbers that fall between 'Scientific' and 'Majestic' in step 4?
A. 118
B. 137
C. 119
D. 84
E. None of the above

43. Which of the following comes exactly between 'Scientific' and 'Hectic' in step 2?
A. 58
B. Majestic , 34 and Fantastic
C. 34 and 58
D. Fantastic
E. None of these

44. Which of the following elements is second to the left of sixth element from right end in step 3?
A. Genetic
B. 29
C. Scientific
D. 77
E. None of these

Directions(45-49): A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in every step. The following is an illustration of input and rearrangement.

Input: 88 25 68 56 58 83 94
Step I: 88 68 25 56 58 83 94
Step II: 88 68 94 25 56 58 83
Step III: 88 68 94 58 25 56 83
Step IV: 88 68 94 58 83 25 56
Step V: 88 68 94 58 83 56 25

Step V is the last step of the arrangement.
Following the same pattern solve the questions given below.

45. Which of the following will be step III of the input '87 37 54 98 46 29'?

A. 98 87 29 37 46 54 B. 98 87 29 46 37 54 C. 87 98 29 37 46 54
D. 98 87 29 46 54 37 E. None of these

46. How many steps will be required to complete the arrangement '38 71 26 93 37 44 54'?

A. II B. III C. IV
D. V E. None of these

47. Which of the following would be the input step for the arrangement whose step IV is '75 49 63 45 53 16 26 41'?

A. 45 75 49 53 16 26 63 41 B. 45 49 53 16 63 75 26 41 C. 75 63 49 53 45 16 41 26
D. 16 63 45 53 49 75 26 41 E. Can't be determined

48. Which of the following will be step IV of the input '90 29 72 84 55 76'?

A. 84 76 55 29 90 72 B. 76 84 29 55 90 72 C. 84 76 55 29 72 90
D. 76 84 29 72 90 55 E. None of these

49. Which of the following will be '95 77 49 56 82 37' of the input '82 49 56 77 95 37'?

A. III B. IV C. V
D. VI E. None of these

Correct answer:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
D	C	E	B	A	A	A	B	D	C	D	C	D	B	C	D	A	E	B	D
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
B	E	D	A	B	C	B	A	B	E	B	D	C	A	E	A	B	D	C	D
41	42	43	44	45	46	47	48	49											
E	A	D	B	B	C	E	B	B											

Common Explanation for (1-5):

Change in word: The words are rearranged as per ascending order of number of letters and placed at extreme left end.

Change in number: The numbers are rearranged as per ascending order of sum of their digits until a single digit is obtained and shifted to extreme right end.

Note- Change in word and number takes place simultaneously at each step. Only one word and one number is changed in a step.

Reference:

Input: variety 35 spices 21 for 79 good 54 taste 46

Step I: for variety 35 spices 21 79 good 54 taste 46

Inference:

Input: strong 64 relation 25 depends 38 on 53 base 45

Step I: on strong relation 25 depends 38 53 base 45 64

Reference:

Step I: for variety 35 spices 21 79 good 54 taste 46

Step II: good for variety 35 spices 79 54 taste 46 21

Inference:

Step I: on strong relation 25 depends 38 53 base 45 64

Step II: base on strong relation 25 depends 53 45 64 38

Reference:

Step II: good for variety 35 spices 79 54 taste 46 21

Step III: taste good for variety 35 spices 54 46 21 79

Inference:

Step II: base on strong relation 25 depends 53 45 64 38

Step III: strong base on relation depends 53 45 64 38 25

Reference:

Step III: taste good for variety 35 spices 54 46 21 79

Step IV: spices taste good for variety 54 46 21 79 35

Inference:

Step III: strong base on relation depends 53 45 64 38 25

Step IV: depends strong base on relation 45 64 38 25 53

Reference:

Step IV: spices taste good for variety 54 46 21 79 35

Step V: variety spices taste good for 46 21 79 35 54

Inference:

Step IV: depends strong base on relation 45 64 38 25 53

Step V: relation depends strong base on 64 38 25 53 45

Final Output:

Input: strong 64 relation 25 depends 38 on 53 base 45

Step I: on strong relation 25 depends 38 53 base 45 64

Step II: base on strong relation 25 depends 53 45 64 38

Step III: strong base on relation depends 53 45 64 38 25

Step IV: depends strong base on relation 45 64 38 25 53

Step V: relation depends strong base on 64 38 25 53 45

Answer:

1. Relation - 53 represents the fifth element from left end in step IV and fourth element from right end in step II respectively.

Hence option D is correct.

2. The odd numbers that come between 'strong' and 'base' in step I are 25 and 53, required difference is 28.

Hence option C is correct.

3. 45 is placed at an extreme end, thus is the odd one out, rest elements are not placed at any extreme end.

Hence option E is correct.

4. Relation is third to the left of fourth element from right end in step III.

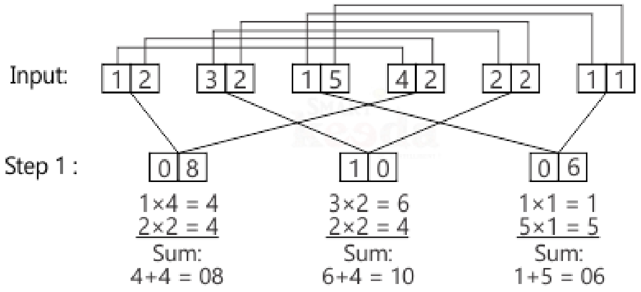
Hence option B is correct.

5. The numbers to the right of 'base' in step I are 45 and 64, required sum is 109.

Hence option A is correct.

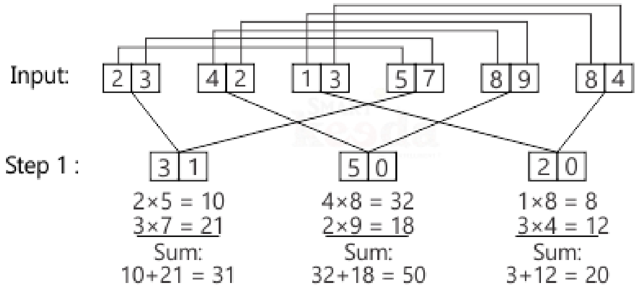
Common Explanation for (6-10):

Reference:

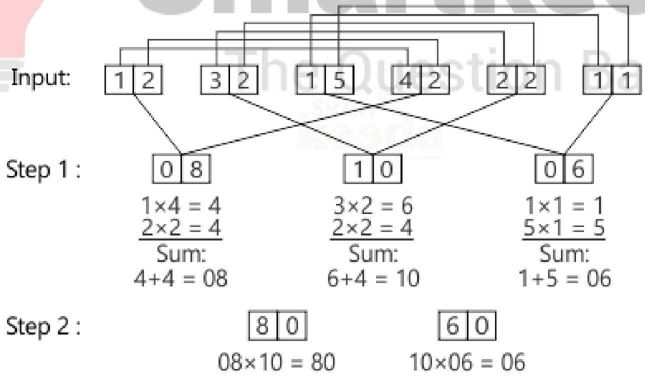

Input:
1 2
3 2
1 5
4 2
2 2
1 1
Step 1 :
0 8
1 0
0 6
1×4 = 4
2×2 = 4
Sum:
4+4 = 08
3×2 = 6
2×2 = 4
Sum:
6+4 = 10
1×1 = 1
5×1 = 5
Sum:
1+5 = 06

Inference:

Digits are first multiplied and then are added before writing in the box of next step.

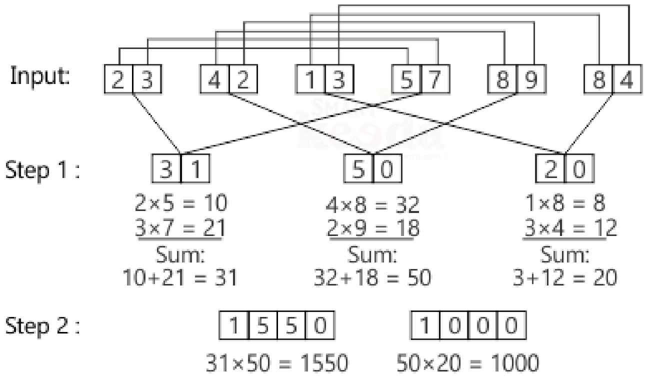

Input:
2 3
4 2
1 3
5 7
8 9
8 4
Step 1 :
3 1
5 0
2 0
2×5 = 10
3×7 = 21
Sum:
10+21 = 31
4×8 = 32
2×9 = 18
Sum:
32+18 = 50
1×8 = 8
3×4 = 12
Sum:
3+12 = 20

Reference:

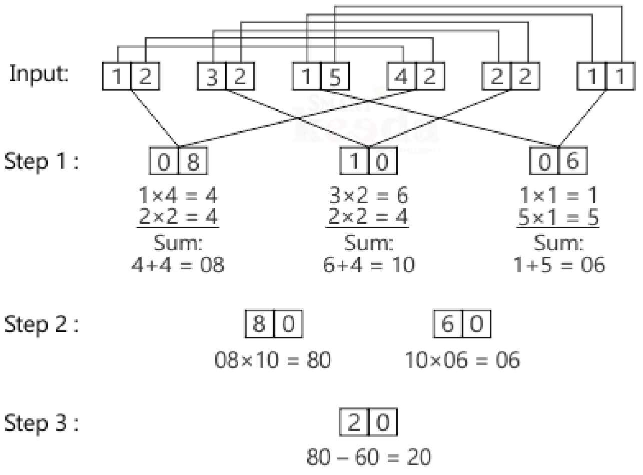

Input:
1 2
3 2
1 5
4 2
2 2
1 1
Step 1 :
0 8
1 0
0 6
1×4 = 4
2×2 = 4
Sum:
4+4 = 08
3×2 = 6
2×2 = 4
Sum:
6+4 = 10
1×1 = 1
5×1 = 5
Sum:
1+5 = 06
Step 2 :
8 0
6 0
08×10 = 80
10×06 = 06

Inference:

Numbers are multiplied keeping the middle box common.

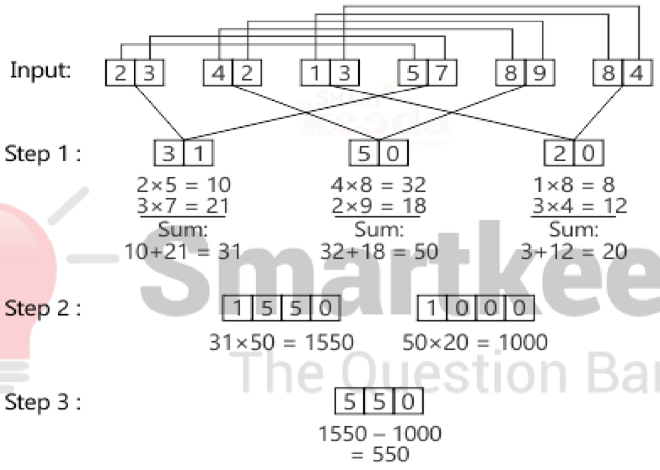

Input:
2 3
4 2
1 3
5 7
8 9
8 4
Step 1 :
3 1
5 0
2 0
2×5 = 10
3×7 = 21
Sum:
10+21 = 31
4×8 = 32
2×9 = 18
Sum:
32+18 = 50
1×8 = 8
3×4 = 12
Sum:
3+12 = 20
Step 2 :
1 5 5 0
1 0 0 0
31×50 = 1550
50×20 = 1000

Reference:

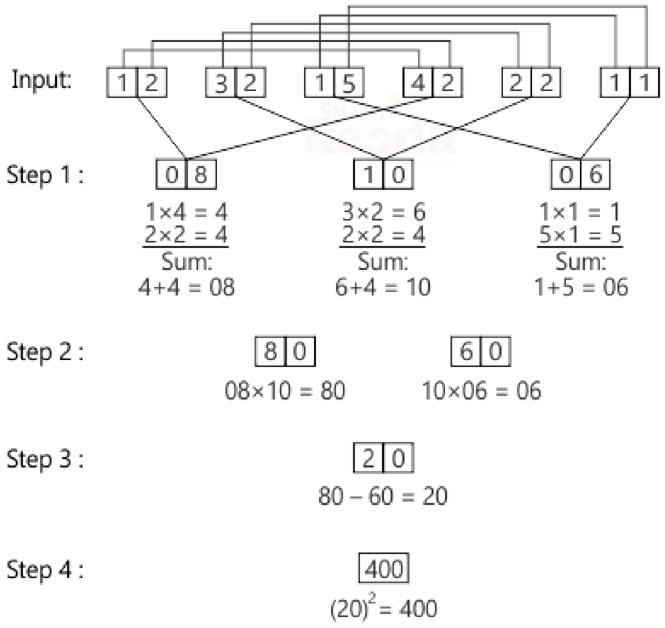

Input:
1 2
3 2
1 5
4 2
2 2
1 1
Step 1 :
0 8
1×4 = 4
2×2 = 4
Sum:
4+4 = 08
1 0
3×2 = 6
2×2 = 4
Sum:
6+4 = 10
0 6
1×1 = 1
5×1 = 5
Sum:
1+5 = 06
Step 2 :
8 0
08×10 = 80
6 0
10×06 = 06
Step 3 :
2 0
80 – 60 = 20

Inference:

Numbers written in the boxes are subtracted.

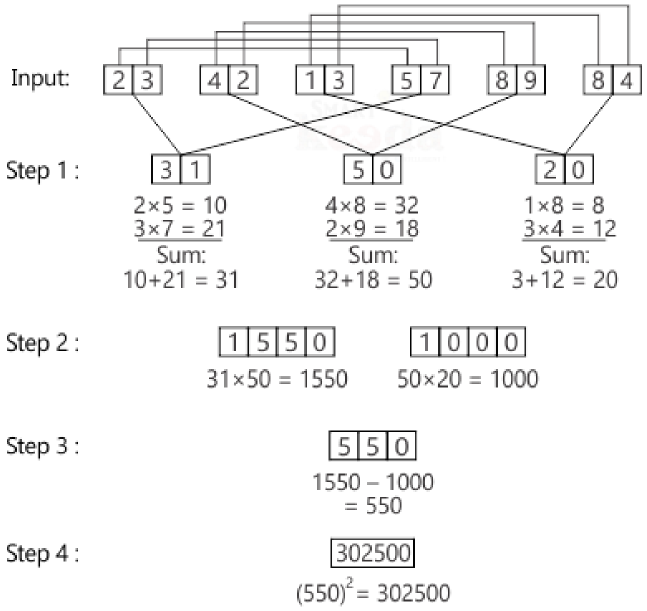

Input:
2 3
4 2
1 3
5 7
8 9
8 4
Step 1 :
3 1
2×5 = 10
3×7 = 21
Sum:
10+21 = 31
5 0
4×8 = 32
2×9 = 18
Sum:
32+18 = 50
2 0
1×8 = 8
3×4 = 12
Sum:
3+12 = 20
Step 2 :
1 5 5 0
31×50 = 1550
1 0 0 0
50×20 = 1000
Step 3 :
5 5 0
1550 – 1000
= 550

Reference:


Input:
1 2
3 2
1 5
4 2
2 2
1 1
Step 1 :
0 8
1×4 = 4
2×2 = 4
Sum:
4+4 = 08
1 0
3×2 = 6
2×2 = 4
Sum:
6+4 = 10
0 6
1×1 = 1
5×1 = 5
Sum:
1+5 = 06
Step 2 :
8 0
08×10 = 80
6 0
10×06 = 06
Step 3 :
2 0
80 – 60 = 20
Step 4 :
400
(20)² = 400

Inference:

Number is now squared to get the final output.


Input: 2 3 4 2 1 3 5 7 8 9 8 4
Step 1 : 3 1 5 0 2 0
2×5 = 10
3×7 = 21
Sum:
10+21 = 31
4×8 = 32
2×9 = 18
Sum:
32+18 = 50
1×8 = 8
3×4 = 12
Sum:
3+12 = 20
Step 2 : 1 5 5 0 1 0 0 0
31×50 = 1550
50×20 = 1000
Step 3 : 5 5 0
1550 – 1000
= 550
Step 4 : 302500
(550)2 = 302500

Answer:

6. 151250 is half of the value obtained in final step.

Option A, is hence the correct answer.

7. 1550 is one of the numbers obtained in step II.

Option A, is hence the correct answer.

8. As, 1550 – 1000 = 550.

So, the Difference between the numbers obtained in step II is 550.

Option B, is hence the correct answer.

9. 50 is one of the numbers obtained in step I.

Option D, is hence the correct answer.

10. Step IV is the required final step.

Option C, is hence the correct answer.

Common explanation for (11-14):

References:

555 cat 651 dog 481 gold 231 modi 631 ruchi

Inferences:

Both word & number are rearranged simultaneously.

Number logic: the sum of digits of number is taken. Number whose sum of digits is lowest is taken and placed at first.

The words are arranged in descending order from right to left from the right end. In the first step, the words are arranged as ascending order according to the first letter of the word and so on.

Input: 555 cat 651 dog 481 gold 231 modi 631 ruchi

Step 1: 231 555 651 dog 481 gold modi 631 ruchi cat

Step 2: 631 231 555 651 481 gold modi ruchi cat dog

Step 3: 651 631 231 555 481 modi ruchi cat dog gold

Step 4: 481 651 631 231 555 ruchi cat dog gold modi

Step 5: 555 481 651 631 231 cat dog gold modi ruchi

Step 5 is the final step

Answer:

11. There is no such step.

Hence, option D is correct.

12. Step 4: 481 651 631 231 **555** ruchi cat dog gold modi

Hence, option C is correct.

13. Step 4: 481 651 631 **231** 555 **ruchi** cat dog gold modi

Hence, option D is correct.

14. Step 5: 555 481 651 631 231 cat dog **gold** modi ruchi

Hence, option B is correct.

Common Explanation for (15-19):

Reference:

Input: always begin from bottom mount high
Step I: aabdho eimty inou ggnooy gmnou isst

Inference:

In the Step I, firstly the consonants within each word in Input step are reversed in cyclic alphabetical order after that the words thus formed are arranged according to dictionary from left to right.

For example:

The word 'Fear' after reversing the consonants in cyclic alphabetical order and arranging the letters in alphabetical order becomes 'aeiu'.

Using the same rule Step I of the given Input can be written as:

Input: fear creates demons only hope defeat
Step I: aeiu aeeghix ehmnow bmoo eoks aeeguw

Reference:

Step II: 3 44 31 23 2 49

Inference:

In the Step II, the difference of numbers obtained from the sum of the numeric position in alphabetic series of each vowel and the sum of the numeric position in alphabetic series of each vowel of the same word in Step I is taken.

For example:

The vowels in the word 'aeiu' are 'a', 'e', 'i' and 'u' and numeric position of 'a', 'e', 'i' and 'u' in alphabetic is '1', '5', '9' and '21' respectively so the sum of the numeric positions of vowels is 1 + 5 + 9 + 21 = 36. As, there are no consonants in the word 'aeiu' so we will consider 36 as the final number.

And, the vowels in the word 'aeeghix' are 'a', 'e', 'e' and 'i' and numeric position of 'a', 'e', 'e' and 'i' in alphabetic is '1', '5', '5' and '9' respectively, so the sum of the numeric positions of vowels is 1 + 5 + 5 + 9 = 20 and the consonants in the word 'aeeghix' are 'g', 'h' and 'x' and numeric position of 'g', 'h' and 'x' in alphabetic is '7', '8', and '24' respectively, so the sum of the numeric position of consonants is 7 + 8 + 24 = 3. And, the difference of 39 and 20 is 19 so the number is 19.

Using the same rule Step II of the given Input can be written as:

Step II: 36 19 38 15 10 2

Reference:

Step III: 48 18 72

Inference:

In the Step III, the digits of first and second number are multiplied within the number and the numbers thus obtained are multiplied form a single number the same pattern is followed with third and fourth number, and fifth and sixth number.

For example:

First and second numbers from left end is Step II are ‘36’ and ‘19’ respectively and after multiplying the digits of ‘36’ and ‘19’ with the numbers we get ‘18’ and ‘9’, and after multiplying ‘18’ and ‘9’ we get 162. So the number is 162.

Using the same rule Step III of the given Input can be written as:

Step III: 162 120 0

Reference:

Step IV: 3 9

Inference:

The first and second numbers from left end in Step III are subtracted then the digits of the number thus formed are added within the number to form the first number from left end in step IV. and the same pattern is repeated with second and third number from left end in step III to form the second number from left end in step IV.

For example:

First and second numbers from left end in Step III are ‘162’ and ‘120’ respectively. The difference of ‘162’ and ‘120’ is 42 and the sum of the digits of ‘42’ is ‘4 + 2 = 6’. So the number is 6.

Using the same rule Step IV of the given Input can be written as:

Step IV: 6 3

Reference:

Step V: 144

Step V is the last step of the arrangement.

Inference:

In the Step V, the sum of the numbers in step IV is taken and the number thus formed is squared.

For example:

After adding the numbers 6 + 3 = 9 and the square of 9 is 81. So the number is 81.

Using the same rule Step V of the given Input can be written as:

Step V: 81

As it is given that Step V is the last step of the arrangement so the given input is completed.

Final Solution:

Input: fear creates demons only hope defeat

Step I: aeiu aeeghix ehmnow bmoo eoks aeeguw

Step II: 36 19 38 15 10 2

Step III: 162 120 0

Step IV: 6 3

Step V: 81

Step V is the last step of the arrangement.

Answer:

15. Following the final solution we can say that 81 will be obtained in final step of the arrangement.

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

16. Following the final solution we can say that the numbers obtained in step IV are ‘6’ and ‘3’.

Required Value = 6 × 3 **= 18**

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

17. Following the final solution we can say that 36 will represent ‘Fear’ in step II.

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

18. Following the final solution we can say that ‘aeeguw’ will be obtained in step I of the given arrangement.

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

19. Following the final solution we can say that the numbers obtained in step III are ‘162’, ‘120’ and ‘0’.

Required Value = 162 + 120 + 0 **= 282**

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

Common Explanation for (20-24):

Reference:

Input: 79 create history 88 imagined 94 every 63 leader 96

Step I: 88 79 create history imagined 94 63 leader 96 every

Step II: 88 79 96 history imagined 94 63 leader every create

Step III: 88 79 96 history imagined 94 63 every create leader

Step IV: 88 79 96 94 imagined 63 every create leader history

Step V: 88 79 96 94 63 every create leader history imagined

Step V is the last step of the arrangement.

Inference:

Here in the above input the numbers and the words are arranged in the different manner.

Arrangement of numbers:

Here the numbers are arranged as the number whose sum of the digits is highest is arranged on the extreme left in the Step I after that the number whose sum of the digits is second highest is arranged the right of the number arranged in step I.

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Number	Digits Sum
88	16
79	16
96	15
94	13
63	9

As the digits sum of both '88' and '79' is same, then the highest number i.e. 88 will be arranged first.

Number	Arrangement Step
88	Step I
79	Step II
96	Step III
94	Step IV
63	Step V

As the arrangement of the numbers follows the left to right pattern therefore it might be possible that some numbers are arranged automatically.

Arrangement of words:

Here the words are arranged as the word having highest number of letters is arranged on the extreme left in the Step I after that the word having second highest number of letters is arranged the right of the word arranged in step I.

If the sum of the digits of two numbers is same then number which highest will be arranged first.

Word	Number of Letters
every	5
create	6
leader	6
history	7
imagined	8

As the number of letters in both 'create' and 'leader' are same, then the word which comes first according to dictionary i.e. 'create' will be arranged first.

Word	Arrangement Step
every	Step I
create	Step II
leader	Step III
history	Step IV
imagined	Step V

As the arrangement of the words follows the right to right pattern therefore the number of steps required to complete the arrangement will not be not be less than the number of words in the given input.

Now, the given input:

Input: 79 create history 88 imagined 94 every 63 leader 96

Numbers

Number	Digit Sum	Arrangement Step
39	12	Step I
74	11	Step II
46	10	Step III
53	8	Step IV
42	6	Step V

Words

Word	Number of Letters	Arrangement Step
never	5	Step I
leaved	6	Step II
object	6	Step III
anyplace	8	Step IV
important	9	Step V

As the number of letters in both 'leaved' and 'object' are same, then the word which comes first according to dictionary i.e. 'leaved' will be arranged first.

Arrangement:

Input: never 42 leaved 39 important object 53 46 anyplace 74

Step I: 39 42 leaved important object 53 46 anyplace 74 never

Step II: 39 74 42 important object 53 46 anyplace never leaved

Step III: 39 74 46 42 important 53 anyplace never leaved object

Step IV: 39 74 46 53 42 important never leaved object anyplace

Step V: 39 74 46 53 42 never leaved object anyplace important

Step V is the last step of the arrangement.+

Answer:

20. Following the final solution we can say that five steps will be required to complete the given input.

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

21. Following the final solution we can say that '39 74 46 53 42 important never leaved object anyplace' will be the last but one.

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

22. Following the final solution we can say that '53' will be on the right of 'Important' in step III.

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

23. Following the final solution we can say that there are five elements between '74' and 'leaved' in Step IV.

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

24. Following the final solution we can say that position of 'Object' will be third from right end in step V.

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

Common Explanation for (25-29):

Change in Number: Change in numbers take place as per the ascending order of the sum of the digits of each number. The number whose sum of digits is smallest is placed at extreme left end followed by the number whose sum of digits is second smallest and so on.

Change in Word: Change in words take place in descending order of number of consonants in each word.The word with the highest number of consonants is placed at left end (immediately after the number) followed by the word with the second highest number of consonants and so on.

Note: Changes in word and number take place in alternate steps starting with number first. If in a step, a number is already at the desired place then for that particular step operation will be performed on word and vice-versa.

The given pattern:

Input: faster 24 and 37 rapid 61 progressive 18 requirement 85 building 93
Step I: 24 faster and 37 rapid 61 progressive 18 requirement 85 building 93
Step II: 24 progressive faster and 37 rapid 61 18 requirement 85 building 93
Step III: 24 progressive 61 faster and 37 rapid 18 requirement 85 building 93
Step IV: 24 progressive 61 requirement faster and 37 rapid 18 85 building 93
Step V: 24 progressive 61 requirement 18 faster and 37 rapid 85 building 93
Step VI: 24 progressive 61 requirement 18 building faster and 37 rapid 85 93
Step VII: 24 progressive 61 requirement 18 building 37 faster and rapid 85 93
Step VIII: 24 progressive 61 requirement 18 building 37 faster 93 and rapid 85
Step IX: 24 progressive 61 requirement 18 building 37 faster 93 rapid and 85
Step X: 24 progressive 61 requirement 18 building 37 faster 93 rapid 85 and

Table showing change in the given pattern:

Change in Word			Change in Number		
Word	No. of consonants	Order of Preference	Number	Sum of digits	Order of Preference
faster	4	4th	24	6	1st
and	2	6th	37	10	4th
rapid	3	5th	61	7	2nd
progressive	7	1st	18	9	3rd
requirement	6	2nd	85	13	6th
building	5	3rd	93	12	5th

Output for the asked input:

Input: technology 47 transfer 26 rate 72 achieving 51 extra 91 version 32
Step I: 32 technology 47 transfer 26 rate 72 achieving 51 extra 91 version
Step II: 32 technology 51 47 transfer 26 rate 72 achieving extra 91 version
Step III: 32 technology 51 transfer 47 26 rate 72 achieving extra 91 version
Step IV: 32 technology 51 transfer 26 47 rate 72 achieving extra 91 version
Step V: 32 technology 51 transfer 26 achieving 47 rate 72 extra 91 version
Step VI: 32 technology 51 transfer 26 achieving 72 47 rate extra 91 version
Step VII: 32 technology 51 transfer 26 achieving 72 version 47 rate extra 91
Step VIII: 32 technology 51 transfer 26 achieving 72 version 91 47 rate extra
Step IX: 32 technology 51 transfer 26 achieving 72 version 91 extra 47 rate

Table showing change in the asked input:

Change in Word			Change in Number		
Word	**No. of consonants**	**Order of Preference**	**Number**	**Sum of digits**	**Order of Preference**
technology	7	1st	47	11	6th
transfer	6	2nd	26	8	3rd
rate	2	6th	72	9	4th
achieving	5	3rd	51	6	2nd
extra	3	5th	91	10	5th
version	4	4th	32	5	1st

Answer:

25. From the following output it is clear that 9 steps are needed to reach the final output.

Hence option B is correct.

26. From the following output it is clear that 'transfer' is fourth to the left of 47 in step VI.

Step VI: 32 technology 51 **transfer** 26 achieving 72 **47** rate extra 91 version

Hence option C is correct.

27. From the following output it is clear that "version 91 47 rate" is seen in the same sequence in step VIII.

Step VIII: 32 technology 51 transfer 26 achieving 72 **version 91 47 rate** extra

Hence option B is correct.

28. From the following output it is clear that 'rate' is exactly between 51 and 91 in step III.

Step III: 32 technology **51** transfer 47 26 **rate** 72 achieving extra **91** version

Hence option A is correct.

29. From the following output it is clear that 'achieving' is seventh from right end in finl output.

Step IX: 32 technology 51 transfer 26 **achieving** 72 version 91 extra 47 rate

Hence option B is correct.

Common Explanation for (30-34):

Change in Word: Change in words takes place as per the dictionary order and placed at the right end just before the number.

Change in Number: Change in numbers takes place as per the ascending order. Thereafter numbers are changed to a new number which is obtained by application of the following rules and then shifted to the extreme right end.

Rule I: If the number is even, then place '2' at the end of the number.
Rule II: If the number is odd, then place '3' at the beginning of the number.

Note: Changes in word and number take place simultaneously in each step.

The given pattern:

Input: name 72 nest 24 near 35 nostalgic 43 narrow 67
Step1: 72 nest near 35 nostalgic 43 narrow 67 name 242
Step2: 72 nest near nostalgic 43 67 name 242 narrow 335
Step3: 72 nest nostalgic 67 name 242 narrow 335 near 343
Step4: 72 nostalgic name 242 narrow 335 near 343 nest 367
Step5: name 242 narrow 335 near 343 nest 367 nostalgic 722

Solution to the given input:

Input: team 55 taboo 48 tackle 83 tissue 69 test 11
Step1: team 55 48 tackle 83 tissue 69 test taboo 311
Step2: team 55 83 tissue 69 test taboo 311 tackle 482
Step3: 83 tissue 69 test taboo 311 tackle 482 team 355
Step4: 83 tissue taboo 311 tackle 482 team 355 test 369
Step5: taboo 311 tackle 482 team 355 test 369 tissue 383

Answer:

30. From the following output it is clear that 'taboo' is third from left in "Input" as well as in "step 4."

Hence option E is correct.

31. From the following output it is clear that "taboo 311 tackle 482 team 355 test 369 tissue 383" is the final output.

Step 5: taboo 311 tackle 482 team 355 test 369 tissue 383

Hence option B is correct.

32. From the following output it is clear that the difference between the highest and the lowest numbers of step 3 is 413.

Step3: 83 tissue **69** test taboo 311 tackle **482** team 355

Hence option D is correct.

33. From the following output it is clear that '69' is second to the left of fourth element from right end in step 2.

Step2: team 55 83 tissue **69** test **taboo** 311 tackle 482

Hence option C is correct.

34. From the following output it is clear that '83 tissue taboo' is seen in the same sequence in step 4.

Hence option A is correct.

Common Explanation for (35-39):

Each step is obtained by applying an **operation different from the previous step**.

Reference:

Input: spread joy laughter by sharing smile with masses
Step1: 9 2 11 5 6 4 7 9

Inference:

Here the operation performed is : **Addition.**

Here, the conversion of letters to numbers is done by performing addition of certain numbers to the number of letters of each word. The numbers are to be written in the same order in which their respective words are written in the input. If the number of letters are even then add 3 to the number of letters, if the number of letters are odd then less 1 from the number of letters.

Following the same logic, we can easily find the values of step 1.
For 'good' number of letters are 4 so its respective number becomes 4 + 3 = 7.
For 'being', number of letters are 5 so its respective number becomes 5 – 1 = 4.
Input: being good to everyone sometimes invite sad trouble

Step1: 4 7 5 11 8 9 2 6

Reference:
Step1: 9 2 11 5 6 4 7 9
Step2: 99 10 42 36

Inference:

Here the mathematical operation performed is : **Multiplication.**
To obtain the first value of step 2, product of first and third numbers (from left end) is taken.
To get the second value of step 2, product of second and fourth numbers is taken.
To acquire the third value of step 2, product of fifth and seventh numbers is taken.
To identify the fourth value of step 2, product of sixth and eighth numbers is taken.

Following the same logic, we can easily find the values of step 2.
Step1: 4 7 5 11 8 9 2 6
Step2: 20 77 16 54

Reference:
Step2: 99 10 42 36
Step3: 57 26

Inference:

Here the operation performed is : **Subtraction.**

First value of step 3 is obtained by taking the difference of first and third numbers from left end.

Second value of step 3 is obtained by taking the difference of second and fourth numbers from left end.

Following the same logic, we can easily find the values of step 3.

Step2: 20 77 16 54

Step3: 4 23

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Reference:

Step3: 57 26

Step4: 5

Inference:

Here the operation performed is : **Average.**

Average of all the digits of step 3 is taken to obtain the value of step 4.

Following the same logic, the value of step 4 is (4+2+3)/3 = 3

Step3: 4 23

Step4: 3

Final Output:

Input: being good to everyone sometimes invite sad trouble

Step1: 4 7 5 11 8 9 2 6

Step2: 20 77 16 54

Step3: 4 23

Step4: 3

Answer:

35. From the following explanation it is clear that if 3 is added to one of the digits of step 3, the final output will become 4 i.e. will be increased by 1.

Hence, option E is the correct answer.

36. From the following explanation it is clear that sum of the numbers of step 3 is 27 (23+4), square of which is 729.

Hence, option A is the correct answer.

37. From the following explanation it is clear that if 'sad' is replaced by "so" then second last value(From left end) of step 1 will become 5 and second last value(From left end) of step 2 will become 40 by replacing 16.

Hence, option B is the correct answer.

38. From the following explanation it is clear that '3' is the only number that belongs to one of the steps of the given output, whereas all other numbers are not from the given steps of output.

Hence, option D is the correct answer.

39. From the following explanation it is clear that the sum of even numbers in step 2 is 90 (20+16+54) and sum of odd numbers in step 3 is 23.

Required difference = 90 – 23 => 67.

Hence, option C is the correct answer.

Common Explanation for (40-44):

Change in Number: Change in numbers take place as per the ascending order of the sum of the digits until a single digit is obtained. The numbers are placed at alternate extreme ends starting from the extreme left end.

Change in Word: Change in words take place as per the ascending order of the number of letters in each word. The words are placed at alternate extreme ends starting from the extreme right end.

Note: Changes in word and number take place simultaneously in each step.

The given pattern:

Input: Fable 76 Quibble 24 Terrible 54 Able 82 Gamble 65
Step1: 82 Fable 76 Quibble 24 Terrible 54 Gamble 65 Able
Step2: Fable 82 76 Quibble 24 Terrible 54 Gamble Able 65
Step3: 76 Fable 82 Quibble 24 Terrible 54 Able 65 Gamble
Step4: Quibble 76 Fable 82 Terrible 54 Able 65 Gamble 24
Step5: 54 Quibble 76 Fable 82 Able 65 Gamble 24 Terrible

Solution to the given input:

Input: Scientific 29 Majestic 34 Fantastic 58 Hectic 77 Genetic 84
Step1: 29 Scientific Majestic 34 Fantastic 58 77 Genetic 84 Hectic
Step2: Genetic 29 Scientific Majestic 34 Fantastic 58 77 Hectic 84
Step3: 58 Genetic 29 Scientific 34 Fantastic 77 Hectic 84 Majestic
Step4: Fantastic 58 Genetic 29 Scientific 34 Hectic 84 Majestic 77
Step5: 34 Fantastic 58 Genetic 29 Hectic 84 Majestic 77 Scientific

Answer:

40. From the following output it is clear that '58' is fifth from the right end in step 1.

Step1: 29 Scientific Majestic 34 Fantastic 58 77 Genetic 84 Hectic

Hence option D is correct.

41. From the following output it is clear that the gretaest number of the arrangement is 84 and the smallest number is 29.

In the final output, there is only one element (Hectic) between them.

Step5: 34 Fantastic 58 Genetic **29** Hectic **84** Majestic 77 Scientific

Hence option E is correct.

42. From the following output it is clear that sum of the numbers that come between Scientific and Majestic in step4 is 34+84 = 118.

Step4: Fantastic 58 Genetic 29 **Scientific** 34 Hectic 84 **Majestic** 77

Hence option A is correct.

43. From the following output it is clear that Fantastic is exactly between 'Scientific' and 'Hectic' in step 2.

Step2: Genetic 29 **Scientific** Majestic 34 **Fantastic** 58 77 **Hectic** 84

Hence option D is correct.

44. From the following output it is clear that 29 is second to the left of sixth element from right end in step 3.

Hence option B is correct.

Common Explanation for (45-49):

Reference:

Input: 88 25 68 56 58 83 94

Step I: 88 68 25 56 58 83 94

Step II: 88 68 94 25 56 58 83

Step III: 88 68 94 58 25 56 83

Step IV: 88 68 94 58 83 25 56

Step V: 88 68 94 58 83 56 25

Step V is the last step of the arrangement.

Inference:

Here, the numbers are arranged as the number whose sum of the digits is highest is arranged on the extreme left in the Step I after that the number whose sum of the digits is second highest is arranged the right of the number arranged in step I.

Number	Digits Sum
88	16
68	14
94	13
58	13
83	11
56	11
25	7

As the digits sum of both ‘94’ and ‘58’ is same, then the highest number i.e. 94 will be arranged first. Similarly, the digits sum of both ‘83’ and ‘56’ is same, then the highest number i.e. 83 will be arranged first.

Number	Arrangement Step
88	Step I
68	Step II
94	Step III
58	Step IV
83	Step V
56	Step VI
25	Step VII

As the arrangement of the numbers follows the left to right pattern therefore it might be possible that some numbers are arranged automatically.

45. Following the common explanation, we can say that step III of the given input will be:

Input: 87 37 54 98 46 29

Step III: 98 87 29 46 37 54

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

46. Following the common explanation, we can say that IV steps will be required to complete the arrangement.

Input: 38 71 26 93 37 44 54

Step IV: 93 38 37 54 71 44 26

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

47. Following the common explanation, we can say we cannot find the input step for the arrangement whose step IV is '75 49 63 45 53 16 26 41'.

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

48. Following the common explanation, we can say that step IV of the given input will be:

Input: 90 29 72 84 55 76

Step IV: 76 84 29 55 90 72

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

49. Following the common explanation, we can say that '76 84 29 55 90 72' is step IV of the given input.

Input: 82 49 56 77 95 37

Step IV: 95 77 49 56 82 37

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

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