REASONING
INPUT - OUTPUT

Input-output

Example 1:

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- njes glfu 53 18 31 44 wird dect

Step I: yktf 106 njes glfu 18 31 44 dect

Step II: plgu 88 yktf 106 glfu 18 31 dect

Step III: inhw 62 plgu 88 yktf 106 18 dect

Step IV: fgev 36 inhw 62 plgu 88 yktf 106

In this new pattern machine input question only one word and one number is arranged in each step.

Let us understand the logic behind it:

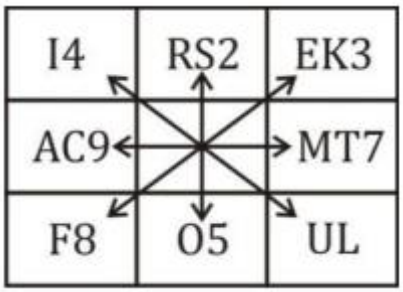
We can see that in each step the words and the numbers both are arranged from the left end.

For words- The word which has highest place value according to alphabetical series is arranged first from left end and each letter of each word is replaced by its second succeeding letter according to alphabetical series and same will be followed in each step.

For numbers- Numbers are arranged in descending order from left end in such a way that each number is multiplied by two.

Example 2:

Study the following diagram and convert it into other diagrams by implementing the instructions which is given in each step to get next step.



Interchange the Alphabets to get step 1 as arrows mention in the above figure.

UL4	O2	F3
MT9		AC7
EK8	RS5	I

Step-1

For Step-2:

(i) If the alphabets contain one consonant and one vowel and the number with them is greater than 3, then subtract 3 from the given number.

(ii) If the alphabets are two consonant and the number with them is greater than 5, then change the letters with the previous letter in alphabetical series.

UL1	O2	F3
LS9		AC4
EK5	RS5	I

Step-2

For Step-3: step 3 is coded in some special pattern.

EK5	R2	I
UL1		F3
LS9	WX5	AC4

Step-3

As, in the above question nothing has mentioned about the step 3. So, we must understand the logic behind this.

For Step 3:

The elements arranged in the first and third column in such way that the element in third row placed in first row and first row element is placed in second row and second row element is placed in third row. The alphabet of first row second column is replaced with the alphabet which is three places after the alphabet in alphabetical series. The alphabet of third row second column is replaced with the alphabet which is five places after the alphabet in alphabetical series.

Practice Exercise Based on new Pattern

Directions (1-5):

Study the following diagram and convert it into other diagrams by implementing the instructions which is given in each step to get next step.

HA	LM	IV
GP		SO
UF	KN	CX

For Step-1:

Add the number of the last alphabet which is in the alphabetical series with the element.

HA1	LM13	IV 22
GP16		SO15
UF 6	KN14	CX24

Step-1

For Step-2:

(i) If the alphabets contain one consonant and one vowel - If the number with them is a whole square, then replace vowel with the opposite letter in alphabetical series and add 2 in the given number. If the number with them is not a whole square, then replace vowel with the second previous letter in the alphabetical series.

(ii) If the alphabets are two consonants – If the number with them is a whole square, then replace alphabets with the opposite letter in alphabetical series and subtract 2 in the given number. If the number with them is not a whole square, then replace alphabets with the second next letter in the alphabetical series.

HZ3	NO13	GV22
TK14		SM15
SF6	MP14	EZ24

Step-2

For Step-3:

Step 3 is coded in some special pattern.

GV22	HZ3	NO13
UL9		TN10
EZ24	SF6	MP14

Step-3

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

CD	FA	OJ
UN		HY
BK	PR	IZ

1. Which of the following element replaces the alphabets SN14 from step-2 to in step 3?

(a) MJ10

(b) KD20

(c)T O9

(d) XW2

(e) None of these

2. Which of the following element replaces HY25 from step-1 to in step 2?

(a)FZ3

(b)SB23

(c)RT18

(d)GZ26

(e)None of these

3. Which of the following element is placed in 2nd column 3rd row in step 3?

(a) DM11

(b) XW2

(c) TC18

(d) RT18

(e) None of these

4. Which of the following is diagonally opposite to the element FZ3 in step3?

(a) GZ26

(b)JA25

(c)TC18

(d)MJ10

(e)None of these

5. Which of the following replaces CD4 from step-1 to in step 2?

(a) XW2

(b) XN14

(c) MJ10

(d) GZ26

(e) None of these

DID YOU KNOW?

In your daily life you are required to put some efforts, and then some processing has to be done so that output will get received. Similarly, In Input-Output, Input that has been given, processed by a particular logic within some steps and then finally you will get the output.

Directions (6-10):

Study the following information to answer the given questions:

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

Input: code word right you thing like

Step I: youv code word right thing like 211

Step II: Worde youv code right thing like 211 44

Step III: thingh Worde youv code right like 211 44 77

Step IV: rightu thingh Worde youv code like 211 44 77 200

Step V: likef rightu thingh Worde youv code 211 44 77 200 55

Step VI: codef likef rightu thingh Worde youv 211 44 77 200 55 55

Step VI: is the last step of the rearrangement.

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

Input: quite similar dull go test vice

6. How many steps would be needed to complete the arrangement?

(a) X

(b) VIII

(c) IX

(d) VI

(e) None of these

7. What will the difference of the numbers which is third from the right end in step III and 1st from the right end in step IV?

(a) 12

(b) 0

(c) 18

(d) 11

(e) None of these

8. Which of the following would be the cube root of the sum of the numbers which is 2nd from right end in step IV and 2nd from right end in Step VI?

(a) 9

(b) 8

(c) 13

(d) 7

(e) None of these

9. Which of the following element will be 6th to the left of 3rd from the right end in step V?

(a) Quitef

(b) Dull

(c) Similar

(d) 200

(e) None of these

10. In Step IV, which of the following word/number would be on 4^{th} position (from the left end)?

(a) Vicef

(b) 188

(c) 55

(d) Quite

(e) None of these

DID YOU KNOW?

The machine input-output is keep on changing recently, as it includes the logic related to place values of the letters of the word or it may some numbers and there will be some mathematical operations applied on it.

Directions (11-15):

Study the following information carefully and answer the given questions. When a word and number arrangement machine is given an input line of words and numbers, it arranges them following a particular rule. The following is an illustration of Input and rearrangement.

Input: camps 59 to 91 concentration 48 including 85 Auschwitz 35.

Step I: Auschwitz 35 camps 59 to 91 concentration 48 including 85.

Step II: Auschwitz 35 camps 91 59 to concentration 48 including 85.

Step III: Auschwitz 35 camps 91 to 48 59 concentration including 85.

Step IV: Auschwitz 35 camps 91 to 48 concentration 85 59 including.

Step V: Auschwitz 35 camps 91 to 48 concentration 85 including 59.

And step V is the last step of the above input. As per the rules followed in the above step, find out the appropriate step for the given output.

Input: 84 Warsaw has 72 14 already 49 come 83 under sharp 37 from 21.

11. Which element is exactly between the elements which are fourth from left end and third from right end in step V?

(a) Sharp

(b) 72

(c) Under

(d) 37

(e) None of these

12. Which step number would be the following output? "already 21 Warsaw 14 has 72 under 37 sharp 83 from 84 come 49."

(a) Step VII

(b) Step IV

(c) Step V

(d) Step VI

(e) Step III

13. What is the position of 'Under' in the step IV?

(a) Fourth from the right end

(b) Sixth from the left end

(c) None of these

(d) Fourth from the left end

(e) Eighth from the right end

14. In step VI, what is the sum of 4th element from the left end and 7th element from the right end?

(a) 56

(b) 51

(c) 48

(d) 54

(e) None of these

15. In which of the following step '37 84 49' found in the same order?

(a) Step II

(b) Step VII

(c) Step IV

(d) Step VI

(e) None of these

DID YOU KNOW?

In some recent exam the new pattern that has been seen includes a diagram having some elements. Some operations are applied on it in a stepwise manner and then the diagram changed accordingly.

Direction (16-20):

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- utys hltk 37 21 19 48 gmrd fexn

Step I: gdwo 100 utys hltk 37 21 48 gmrd

Step II: hlqe 100 gdwo 100 utys hltk 21 48

Step III: iksl 9 hlqe 100 gdwo 100 utys 48

Step IV: vsxt 144 iksl 9 hlqe 100 gdwo 100

Answer the following questions based on the following input: -

Input- qewb 23 plsf 17 15 cjrx 36 ytvd

16. What will be the difference of the number which is second from the left end of step I and which is third from the right end of step III?

(a) 52

(b) 28

(c) 0

(d) 91

(e)None of these

17. What will be the third step of the given input?

(a) Step III- rdvc 36 qkrg 25 diqy 64 32 ytvd

(b) Step III- qkrg 36 25 rdvc diqy 64 36 ytvd

(c) Step III- rdvc 36 qkrg 25 diqy 64 36 ytvd

(d) Step III- qkrg 36 rdvc 25 diqy 64 ytvd 36

(e) None of these

18. Which of the following word/number will be third to the left of sixth from the left end in step II?

(a) 25

(b) Rdvc

(c) 64

(d) Diqy

(e)None of these

19. What will be the twice of the difference of sixth number from the left end of step I and fifth number from right end of step IV?

(a) 34

(b) 42

(c) 28

(d) 44

(e) None of these

20. In step IV, what is the sum of 2nd element from the left end and 5th element from the right end?

(a) 107

(b) 89

(c) 117

(d) 106

(e) None of these

DID YOU KNOW?

In some of the input-output questions, now a days there can be seen some different logics which includes omission and addition of letters in the words.

Directions (21-25):

Study the following information carefully and answer the given questions.

When a word and number arrangement machine is given an input line of words and numbers, it arranges them following a particular rule. The following is an illustration of Input and rearrangement.

Input: 18 quora 26 diagnose 89 maths 27 eat

Step I: fkcipqug quora 26 89 maths 27 eat 18

Step II: gcv fkcipqug quora 26 89 maths 18 27

Step III: ocvju gcv fkcipqug quora 89 18 27 26

Step IV: swqtc ocvju fkcipqug 18 27 26 89

And step IV is the last step of the above input. As per the rules followed in the above step, find out the appropriate step for the given output.

INPUT: Queen 79 apple 38 vowel 19 jungle 26

21. Which element is exactly between the elements which are fourth from left end and third from right end in step IV?

(a) 79

(b) 26

(c) 38

(d) 19

(e) None of these

22. Which step number would be the following output?

"swggp lwping crrng 79 vowel 19 38 26"

(a) Step III

(b) Step IV

(c) Step I

(d) Step II

(e) None of the Above

23. What is the position of 'vowel' in the step II?

(a) Seventh from the right end

(b) Sixth from the left end

(c) Fourth from the right end

(d) Fourth from the left end

(e) None of these

24. In step II, what is the sum of 7th element and 6th element from left end?

(a) 56

(b) 54

(c) 48

(d) 45

(e) None of these

25. Which of the following would be at the third position from the left end in step IV?

(a) Swggp

(b) Lwping

(c) Crrng

(d) 19

(e) None of these

Direction (26-30):

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- juhs elok 65 17 32 15 pnir veox

Step I: ednc 6511 juhs elok 17 32 15 pnir

Step II: kmhi 325 ednc 6511 juhs elok 17 15

Step III: qtsh 178 kmhi 325 ednc 6511 elok 15

Step IV: donp 156 qtsh 178 kmhi 325 ednc 6511

Answer the following questions based on the following input: -

Input- wder 76 yqok 33 54 isxv 13 zcjf

26. What will be the difference of the number which is second from the left end of step II and which is second from the left end of step III?

(a) 252

(b) 218

(c) 213

(d) 191

(e)None of these

27. What will be the step II of the given input?

(a) Step II- bjnp 549 axqu 76 wder 33 isxv 13

(b) Step II- bjnp 549 axqu 7613 wder 33 isxv 13

(c) Step II- 549 bjnp axqu 7613 wder 33 isxv 13

(d) Step II- bjnp 546 axqu 7613 wder 33 isxv 13

(e) None of these

28. Which of the following word/number will be third to the left of sixth from the left end in step III?

(a) 134

(b) Bjnp

(c) 336

(d) Dwdi

(e) None of these

29. What will be the twice of the difference of second number from the left end of step IV and fifth number from right end of step IV?

(a) 384

(b) 424

(c) 828

(d) 404

(e) None of these

30. In which of the following step '7613 isxv 13' found in the same order?

(a) Step II

(b) Step II

(c) Step IV

(d) Step III

(e) None of these

Directions (31-35):

Study the following information to answer the given questions.

A word arrangement machine when given an input line of words rearranges them by following different operation in each step. The following is an illustration of input and rearrangement.

Input: Duplicate YouTube Google Jaboong Myntra Strengths

Step I: 13*4 11*4 9%3 10*3 7%1 10*1

Step II: 3 4 1

Step III: es ea eg

Step IV: 6

Step IV: is the last step of the arrangement of the above input as the intended arrangement is obtained.

Now, answer the questions based on the following input.

Input: chamber satellite international domestic ambassador conference

31. Which of the following will be the sum of all the digits in step I?

(a) 58

(b) 43

(c) 81

(d) 62

(e) None of these

32. Which of the following is the final step?

(a) 7

(b) 9

(c) 8

(d) 6

(e) None of these

33. If there was one more word "transfer" placed right to conference in the input then what will be step I ?

(a) 9*2 13*4 18*5 11%3 14%4 14%4 10%2

(b) 9*2 13*4 18*5 11%3 14%3 14%4 10*5

(c) 9*2 13*4 18*5 11%2 14%4 14%4 10%2

(d) 9*2 13*4 19*6 11%3 14%4 14%4 10%2

(e) None of these

34. Which of the following represents the sum of all the digits in step II?

(a) 14

(b) 10

(c) 2

(d) 13

(e) None of these

35. What is the total sum of the numbers before and after the symbol in step I?

(a) 102

(b) 103

(c) 100

(d) 105

(e) None of these

Directions (36-40):

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- Draft 95 alliance 67 ideological 58 complex 62

Step-I: revlmlhrdzm draft 95 alliance 58 complex 62 67

Step-II: revlmlhrdzm eszgu alliance 58 complex 62 67 95

Step-III: revlmlhrdzm eszgu dlnqmvy alliance 62 67 95 58

Step-IV: revlmlhrdzm eszgu dlnqmvy zmmrzodv 67 95 58 62

Input- tactics 89 constrained 73 Macro 56 hardline 42

36. How many steps are required to rearrange the given input?

(a)III

(b)VI

(c)V

(d)IV

(e) None of these

37. What will be the second step of the given input?

(a) Step II- uzdurdt nzdsl constrained 56 hardline 73 42 89

(b) Step II- uzdurdt nzdsl constrained 42 hardline 56 73 89

(c) Step II- uzdurdt nzdsl constrained 56 hardline 42 73 89

(d) Step II- uzdurdt nzdsl constrained 73 56 hardline 42 89

(e) None of these

38. Which of the following word/number will be at fifth position from right end in III step?

(a) 73

(b) Nzdsl

(c) 56

(d) Constrained

(e)None of these

39. What is the addition of 2nd and 5th element from the right end in step II?

(a) 130

(b) 129

(c) 128

(d) 121

(e)None of these

40. Which step gives following output?

"Uzdurdt nzdsl izsemrov constrained 56 73 89 42"

(a) Step-I

(b) Step-II

(c) Step-III

(d) Step-IV

(e)None of these

Solutions

Directions (1-5):

CD	FA	OJ
UN		HY
BK	PR	IZ

The alphabets are arranged according to the directions are given for step 1.

CD 4	FA 1	OJ10
UN14		HY 25
BK11	PR 18	IZ 26

Step-1

The alphabets are arranged according to the directions are given for step 2.

XW2	FZ3	MJ10
SN14		SB23
DM11	RT18	GZ26

Step-2

For Step-3:

(i) The elements arranged in a serial way in first and third row as element of third column is placed in first column, element of first column is placed in second column and element of second column is placed in third column.

(ii) In the second row the elements are arranged in the given arrangement-

The Consonant are replaced with the letter in the alphabetical series with the next letter of the given letter in alphabetical series. There is a subtraction of 5 from the given number.

MJ10	XW2	FZ3
TO9		TC18
GZ26	DM11	RT18

Step-3

1. (c)

2. (b)

3. (a)

4. (a)

5. (a)

Directions (6-10):

Logic: - There are six words in the input. In each of the step the words are arranged in reverse alphabetical order such that next letter of the last letter of that word is also placed with it. Also, in each step a number is placed at the right end which is the place value of the last letter of the word which is arranged, with the last digit of that number (place value) is repeated once in it. For example, Vice (place value of e = 5) so 55 is placed at the rightmost end.

Input: quite similar dull go test vice

Step I: vicef quite similar dull go test 55

Step II: testu vicef quite similar dull go 55 200

Step III: similars testu vicef quite dull go 55 200 188

Step IV: quitef similars testu vicef dull go 55 200 188 55

Step V: gop quitef similars testu vicef dull 55 200 188 55 155

Step VI: dullm gop quitef similars testu vicef 55 200 188 55 155 122

6. (d);

7. (b);

8. (d);

9. (c);

10. (a);

Direction (11-15):

Students let us understand the Logic behind this Question and let's understand how to solve it. When we see each step, then we can find that the machine rearranges one word and one number in each step simultaneously, words and numbers both are arranged from left end.

(i) Words are arranged in decreasing alphabetical order according to the last letter of the word and same will be followed in further steps.

(ii) Numbers are arranged in increasing order, according to addition of their digits. (For example: 19 = 9+1=10).

INPUT: 84 Warsaw has 72 14 already 49 come 83 under sharp 37 from 21.

Step I: already 21 84 Warsaw has 72 14 49 come 83 under sharp 37 from.

Step II: already 21 Warsaw 14 84 has 72 49 come 83 under sharp 37 from.

Step III: already 21 Warsaw 14 has 72 84 49 come 83 under sharp 37 from.

Step IV: already 21 Warsaw 14 has 72 under 37 84 49 come 83 sharp from.

Step V: already 21 Warsaw 14 has 72 under 37 sharp 83 84 49 come from.

Step VI: already 21 Warsaw 14 has 72 under 37 sharp 83 from 84 49 come.

Step VII: already 21 Warsaw 14 has 72 under 37 sharp 83 from 84 come 49.

11. (d);

12. (a);

13. (e);

14. (b);

15. (c);

Direction (16-20):

In the given Input-Output one word and one number is being arranged simultaneously in each step.

For Words- In first step- The word which comes first according to alphabetical series will be arranged from left end such that it's first and last letter of the word will be replaced with its next letter and rest of the letters are replaced with their preceding letter. Then the next word according to alphabetical order will be arranged in second step from the left end and so on.....

For numbers- All the numbers are arranged with the one word simultaneously in each step, such that first the prime numbers are arranged in ascending order and then non-prime numbers will be arranged. Each of the

number will be arranged by following logic as number will be replaced with the square of the addition of the digits of that number after arrangement.

Input- qewb 23 plsf 17 15 cjrx 36 ytvd

Step I: diqy 64 qewb 23 plsf 15 36 ytvd

Step II: qkrg 25 diqy 64 qewb 15 36 ytvd

Step III: rdvc 36 qkrg 25 diqy 64 36 ytvd

Step IV: zsue 81 rdvc 36 qkrg 25 diqy 64

16. (c);

17. (c);

18. (d);

19. (b);

20. (c);

Direction (21-25):

Students let us understand the Logic behind this Question and let's understand how to solve it. When we see each step, then we can find that the machine rearranges one word and one number in each step simultaneously, words are arranged from left end and numbers are arranged from right end.

(i) Words are arranged in increasing alphabetical order with each letter of word is replaced by its 2nd succeeding letter according to alphabetical series and same will be followed in further steps.

(ii) Numbers are arranged in decreasing order, according to difference of their digits. (For example: 19 = 9-1=8).

INPUT: Queen 79 apple 38 vowel 19 jungle 26

Step I: crrng queen 79 38 vowel jungle 26 19

Step II: lwping crrng queen 79 vowel 26 19 38

Step III: swggp lwping crrng 79 vowel 19 38 26

Step IV: xqygn swggp lwping crrng 19 38 26 79

21. (d);

22. (a);

23. (c);

24. (d);

25. (b);

Direction (26-30):

For words- All the words are arranged in descending order in alphabetical series. The logic of the arrangement of words is that the word which is last according to the alphabetical series is arranged first from the left end in step I, then the word which is second last according to the alphabetical order is arranged from the left end in step II and so on....Also in the words each of the consonant is replaced by its opposite letter and each vowel is replaced by its previous letter while arrangement. For Numbers-Only One number is arranged along with one word in each step. The logic of the arrangement of numbers is that the numbers are arranged in decreasing order as the highest number is arranged in step I with the word then second highest number is arranged in step II with the next word and so on... Each number is arranged along with one word in such a way that the sum of the digits of that number is placed next to it.

Input- wder 76 yqok 33 54 isxv 13 zcjf

Step I: axqu 7613 wder yqok 33 54 isxv 13

Step II: bjnp 549 axqu 7613 wder 33 isxv 13

Step III: dwdi 336 bjnp 549 axqu 7613 isxv 13

Step IV: hhce 134 dwdi 336 bjnp 549 axqu 7613

26. (c);

27. (b);

28. (b);

29. (d);

30. (d);

Directions (31-35):

In the given machine input, different operation are performed in different steps:

In step I:

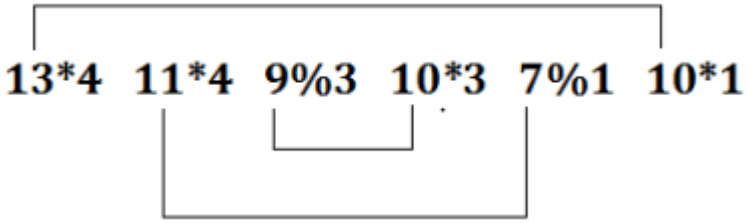
(a) The number before the symbol- Total number of letters in the word + number of vowels in the word.

(b) The number after the symbol- Total number of vowels in the word.

(c) Symbol- if the resultant of number in {(a) +(b)} is even then % and if it is odd then '*'.

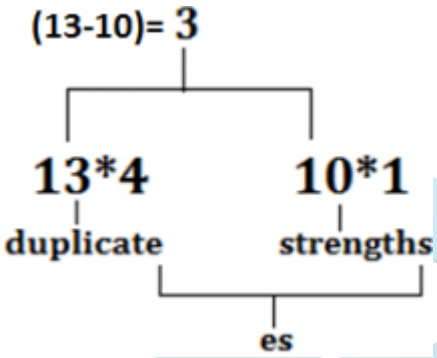
In step II:

The difference between the first numbers of the words according to the following pattern.



Step III:

The last letters of the words combinedly used in the step II.



Step IV. Adding the place value of all the letters obtained in step III and then adding the digits obtained after the sum.

Es Ea Eg ---- 5+19+5+1+5+7=42=6

INPUT: chamber satellite international domestic ambassador conference

Step I: 9*2 13*4 19*6 11%3 14%4 14%4

Step II: 5 1 8

Step III: re er lc

Step IV: 7

31. (a);

32. (a);

33. (d);

34. (a);

35. (b);

Directions (36-40):

In this new pattern Input-Output question only one word and one number is arranged in each step. Let us understand the logic behind it- In each step the words are arranged from the left end such that in 1st step word are arranged in extreme end than 2nd word are arranged in 2nd left end and so on... while the numbers are arranged from the right end.

For words- words are arranged according to reverse alphabetical order (English dictionary) from left end with each vowel of word is replaced by its opposite letter according to alphabetical series while each consonant of word is replaced by its succeeding letter according to alphabetical series and same will be followed in further steps.

For numbers- Numbers are arranged in ascending order from right end in such a way that first all odd numbers are arranged after that all even numbers are arranged.

Input- tactics 89 constrained 73 Macro 56 hardline 42

Step-I: uzdurdt 89 constrained macro 56 hardline 42 73

Step-II: uzdurdt nzdsl constrained 56 hardline 42 73 89

Step-III: uzdurdt nzdsl izsemrov constrained 56 73 89 42

Step-IV: uzdurdt nzdsl izsemrov dlotuszrove 73 89 42 56

36. (d);

37. (c);

38. (d);

39. (b);

40. (c);