TCS NQT Numerical Ability Questions

Here are the TCS NQT Questions under Numerical Ability, asked in the previous NQT.

Q1. What is the fourth proportional of 0.006, 1.2 & 6/25?

A. 36

B. 48

C. 4.8

D. 3.6

Answer: Option B

Explanation:

Let the fourth proportional be x

Then,

0.006: 1.2 :: 6/25 : x

0.006 * x = 1.2 * 6/25 (Since Product of means = Product of extremes)

x = (1.2*6)/(25*0.006)

x = 7.2/0.15

x = 48

Q2. Two ants of length 1 cm and 1.2 cm crawl in opposite directions with average speeds of 2 and 3 mm per second respectively. How many seconds will they take to cross each other?

A. 4.4

B. 2.8

C. 0.4

D. 1.5

Answer: Option A

Explanation:

Relative distance to be covered = Sum of the lengths of ants

= 1 + 1.2

= 2.2 cm

= 22 mm (1 cm = 10 mm)

Relative speed when bodies move in opposite directions = Sum of the speeds

= 2 + 3

= 5 mm per second

Time taken to cross each other = Relative distance / Relative speed

= 22/5

= 4.4 seconds

Q3. The index numbers of five commodities are 121, 123, 125, 126, 128 and the weights assigned to these are respectively 5, 11, 10, 8, 6. Then what is the weighted average index number?

A. 123.8

B. 124.2

C. 124.6

D. 125.2

Answer: Option C

Explanation:

Weighted average = Sum of all the weights / Total number of weights

Sum of all the weights = 121*5 + 123*11 + 125*10 + 126*8 + 128*6

= 605 + 1353 + 1250 + 1008 + 768

= 4984

Number of weights = 5 + 11 + 10 + 8 + 6

= 40

Weighted average = 4984 / 40

= 124.6

Q4. Which one among the following has the least value?

A. √75 - √74

B. √74 - √73

C. √77 - √76

D. √76 - √75

Answer: Option C

Explanation:

Rationalizing the options

√75 - √74 * (√75 + √74)/(√75 + √74) = 1/(√75 + √74)

√74 - √73 * (√74 + √73)/(√74 + √73) = 1/(√74 + √73)

√77 - √76 * (√77 + √76)/(√77 + √76) = 1/(√77 + √76)

√75 - √74 * (√75 + √74)/(√75 + √74) = 1/(√75 + √74)

Comparing all the fractions, 1/(√77 + √76) is the least value as its denominator is the greatest

Q5. A sum was lent to Ravi for three years by an organization that fixed a yearly rate of 10% compound Interest for repayment along with the condition of recovery in equal installments of Rs.31944. What percentage (correct to two decimal places) above the borrowed amount Ravi had to pay the organization?

A. 18.43

B. 21.25

C. 16.52

D. 20.63

Answer: Option D

Explanation:

Let x be the amount borrowed.

After one year amount will be = 1.1 x

Amount remaining after paying the first installment = 1.1x - 31944

For the next year, this amount acts as the principal

After second year amount will be = 1.1 (1.1x - 31944)

= 1.21x - 35138.4

Amount remaining after paying the second installment = 1.21x - 35138.4 - 31944

= 1.21x - 67082.4

This acts as principal for the third year

After third year, amount will be = 1.1(1.21x - 67082.4)

= 1.331x - 73790.64

This amount should exactly be equal to the final installement.

Hence, 1.331x - 73790.64 = 31944

1.331x = 105734.64

x = 105734.64/1.331

x = 79440

Borrowed amount = 79440

Amount paid = 31944*3

= 95832

Percentage of extra amount paid = (95832-79440)/79440 * 100

= (16392/79440) * 100

= 20.63%

TCS NQT Reasoning Ability Questions

Here are the TCS NQT Questions under Reasoning Ability, asked in the previous NQT

Q1. Among 5 objects P, Q, R, S and T

i. R is twice as heavy as T

ii. S is one and half times as heavy as Q

iii. Q and R together weigh as much as S and T together

iv. P and S together are one and half time as heavy as Q and T together

Which among the five is the heaviest of all?

A. Q

B. S

C. P

D. R

Answer: Option B

Explanation:

From statement (i), R = 2T --- Eq (1)

From statement (ii), S = 1.5Q --- Eq (2)

From statement (iii), Q+R = S+T --- Eq (3)

From statement (iv), P+S = 1.5(Q+T) --- Eq (4)

Substitute Eq (1) and Eq (2) in Eq (3)

Q+2T = 1.5Q+T

0.5Q = T

Q = 2T --- Eq (5)

Substitute Eq (5) in Eq (2)

S = 1.5(2T)

S = 3T --- Eq (6)

Substitute Eq (5) and Eq (6) in Eq (4)

P+3T = 1.5(2T+T)

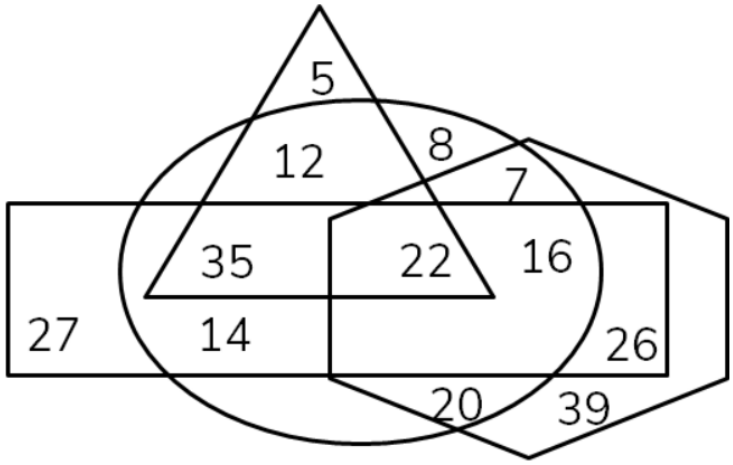
P+3T = 4.5T

P = 1.5T

Now, it is obvious that T will be a positive value as T is the weight of a person.

So, among all the above values, S = 3T will be highest and hence S will be the heaviest of all.

Q2. In the following diagram, the triangle stands for ‘males’, the circle for ‘doctors’, the rectangle for ‘government employed', the hexagon for ‘corona warriors’. The numbers in different segments show the number of persons for that segment. How many government-employed doctors are either corona warriors or males or both?



A. 22

B. 73

C. 35

D. 38

Answer: Option B

Explanation:

Here we need to find government-employed doctors who are either corona warriors or males or both.

To find out the number of government-employed doctors who are corona warriors, we need to check the intersection of rectangle, circle and hexagon and the value is 16.

To find out the number of government-employed doctors who are males, we need to check the intersection of rectangle, circle and triangle and the value is 35.

To find out the number of government-employed doctors who are both corona warriors and males, we need to check the intersection of rectangle, circle, hexagon and triangle and the value is 22.

So, the total number of government-employed doctors who are either corona warriors or males or both = 16+35+22 = 73.

Q3. There are five rods K, L, M, N and O. The weight of O is twice L. The weight of L is equal to the weights of K and M together. The weight of M is twice the weight of K. The

weight of N is three times the weight of M. If the weight of N is 90 kg, what will be the weight of O?

A. 120 kg

B. 60 kg

C. 105 kg

D. 90 kg

Answer: Option D

Explanation:

Given,

The weight of O is twice L

O = 2L --- Eq (1)

The weight of L is equal to the weights of K and M together

L = K+M --- Eq (2)

The weight of M is twice the weight of K

M = 2K --- Eq (3)

The weight of N is three times the weight of M

N = 3M --- Eq (4)

Given, N = 90 kg --- Eq (5)

From Eq (4), 3M = 90

M = 30 --- Eq (6)

Substitute Eq (6) in Eq (3)

30 = 2K

K = 15

Substitute the value of K and M in Eq (2)

L = 15 + 30 = 45

Now, substitute the value of L in Eq (1)

O = 2(45) = 90

Q4. Which is the odd term in the following series?

CMQ, FPT, JTX, OYC, UFI

A. FPT

B. OYC

C. JTX

D. UFI

Answer: Option D

Explanation:

CMQ: The difference between C and M is 10. The difference between M and Q is 4.

FPT: The difference between F and P is 10. The difference between P and T is 4.

JTX: The difference between J and T is 10. The difference between T and X is 4.

OYC: The difference between O and Y is 10. The difference between Y and C is 4 (Here, the place value of C is 29 because, after Z which is the 26th letter, the 27th letter will be A, the 28th letter will be B and so on)

UFI: The difference between U and F is 11 (Here the place value of F is 32). The difference between F and I is 3.

So, UFI is the odd term of the given series.

Directions for questions 5 and 6: The number of employees working in six different departments of two companies A and B are given below. Study the given data and answer the questions that follow.

Company A	
Department	**Number of Employees**
Marketing	256
HR	72
Production	504
Accounts	68
Operations	256
Planning	46
Total	**1202**

Company B	
Department	**Number of Employees**
Marketing	524
HR	108
Production	736
Accounts	122
Operations	146
Planning	58
Total	**1694**

Q5. If 30 employees of the Planning department quit Company B and join the Planning department of Company A, then what is the percentage of employees in the Planning Department in the total employees in Company A?

A. 5.34%

B. 6.16%

C. 6.32%

D. 4.48%

Answer: Option C

Explanation:

Given, 30 employees quit Company B and join the Planning department of Company A.

Number of employees in the Planning department of Company A = 46+30 = 76

Total employees in Company A = 1202

Percentage of employees in the Planning Department in the total employees in Company A = (76/1202) X 100 = 6.32%

TCS NQT Verbal Ability Questions

Here are the TCS NQT Questions under Verbal Ability, asked in the previous NQT

Q1. For the four sentence (S1 to S4) paragraph given below, sentences S1 & S4 are given. From the options P, Q and R, choose appropriate sentences for S2 & S3.

S-1: Some of the earliest currencies were objects from nature.

S-2:

S-3:

S-4: They were similar in size, small and durable.

1. Although they may seem a pretty random choice the shells had a number of advantages.
2. A notable example is cowrie shells first used as money about 1200 BCE.
3. Counterfeiting dates to the invention of money.
4. QP
5. RQ
6. PQ
7. PR

Answer: Option A

Explanation:

In order to find the appropriate sentences to be fixed as S-2 and S-3, let us first try to relate the given optional sentences (P, Q, R) with respect to the fixed ones (S-1 and S-4).

If we consider the last sentence (i.e. S-4), there is a pronoun ‘They’ (*They* were similar in size, small and durable). We know that a pronoun can be introduced only after the introduction of a noun. Is the noun for this pronoun ‘They’ introduced in any of the fixed part of the paragraph?

No. If we consider the first sentence S-1, there is a noun, ‘objects from nature’. But this is not the noun for the pronoun in S-4. Because the noun in S-1, in general, represents some objects from nature which are considered as currencies. But S-4, in specific, describes a particular object that is similar in size, small and durable. One such specific object from nature is introduced as a noun in which of the given four optional sentences?

Yes. One such specific object from nature is introduced in sentence Q (A notable example is *cowrie shells* first used as money about 1200 BCE). So, the noun for the pronoun in S-4 is ‘Cowrie shells’ which is introduced in sentence Q. So, sentence Q should definitely be included as a part in the answer option.

Now in order to find the order for sentence Q, we have to first find the other sentence to be related to the paragraph. Between the remaining two optional sentences P and R, which one can be related to the paragraph?

Yes. The phrase given in R is not even a sentence. It can be a title to the paragraph, but it cannot be related as a part of the paragraph. So, the other sentence to be related to the paragraph is sentence P. Also in sentence P, there is a pronoun ‘they’ (Although *they* may seem). The noun for this pronoun should also be ‘Cowrie shells’ which is introduced in sentence Q. As a pronoun can only follow the noun, the order in which the sentences are to be fixed in S-2 and S-3 is Q and P respectively (The sentence P with the pronoun can only follow the sentence Q with the noun). One such required order of QP is given in option A and hence is the correct answer.

Q2. Select the part of the sentence with error.

Since sunrise to sunset my grandmother would sit by her wheel spinning and reciting prayers.

1. No error
2. My grandmother would sit by her wheel
3. Spinning and reciting prayers
4. Since sunrise to sunset

Answer: Option D

Explanation:

In the given sentence the time period is represented as ‘*Since* sunrise *to* sunset’.

Here the given time period is a specific duration with a definite start and end time. In order to represent a specific time duration with a definite start and end time we use the prepositions ‘from’ and ‘to’. Example: *From* 5 a.m. *to* 10 a.m., *From* Monday *to* Thursday etc..

Also the preposition ‘since’ is used to represent the start time of an action/ a happening which had started some time in the past and is still in progress even at the time of reporting. Example: The unit has been functioning great *since* 2013.

As the time reference presented in the question is with respect to a definite start and end time (sunrise and sunset) the appropriate preposition to be used in the given context is ‘From … to…’.

Thus, the use of the preposition ‘since’ in the sentence is not correct and so the part ‘Since sunrise to sunset’ is the one which has error in it. This part is given in option D and hence is the correct answer. If we correct the error, the correct sentence is ‘*From* sunrise to sunset my grandmother would sit by her wheel spinning and reciting prayers.’

Q3. Choose the option that best fits the blank(s).

The candidates _____ certificates the office could not verify were not permitted to appear before the interview board.

1. Whom
2. Whose
3. Who
4. Which

Answer: Option B

Explanation:

The word that precedes the blank is ‘The candidates’ and the word that follows the blank is ‘certificates’. From the context it can be understood that ‘the certificates *belong to* the candidates’ or ‘the candidates *possess* the certificates’.

If we consider the given options, all the options (whom, whose, who, which) are relative pronouns.

So, from the context it can be understood that the required relative pronoun to be fitted in the blank should reflect the sense of *possession*.

One such relative pronoun that reflects the sense of possession is ‘*whose*’ which is given in option B. Hence option B is the correct answer. If we relate the same, the correct sentence is ‘The candidates *whose* certificates the office could not verify were not permitted to appear before the interview board.’

Use of other options:

‘*Whom*’ is used to represent a person when the person is in the *object* position of the verb. Example: I submitted the proposal to the person whom I met yesterday.

‘*Who*’ is used to represent a person when the person is in the *subject* position of the verb. Example: The person who received the proposal has approved the project.

‘*Which*’ is used to represent *things and animals*. Example: I read the letter which was delivered today.

Q4 to Q6. Read the passage given below and answer the questions.

It’s apparently humankind’s fate never to stop writing the history of pandemics. No matter how often they occur - and they do occur with great frequency - we collectively refuse to think about them until circumstances demand it. Then, when the immediate crisis passes, we put it out of our minds as quickly as possible. And so, we again are unprepared when the next contagion - in this case, COVID-19 - bursts upon us. Richard Conniff traces this alarming cycle in “How devastating pandemics change us,” this month’s cover story. It examines our long relationship with infectious diseases, from the hard lessons we’ve been forced to learn to the brave, and often difficult, characters who’ve risked their lives to save us.

Smallpox taught us that we could prevent disease through inoculation and, as the 1700s ended, vaccination. By the mid-1800s, cholera’s lesson was about sanitation and the need for centralized water and sewer systems. About the same time, one man we’ve all heard of, Louis Pasteur, and one many of us haven’t, Robert Koch, became the co-fathers of germ theory. Tools they created are still used to identify and fight what Conniff calls “an astonishing rogues’ gallery of deadly pathogens.”

And yet here we are, again, fighting on two fronts: the first, against a new coronavirus sweeping the planet to devastating effect; the second, with each other, over domestic and international politics and whether we’re willing to pay the price of prevention.

It’s an important question for our planet. While we debate, the next pandemic draws nearer.

Q4. Which statement is CORRECT according to the passage?

1. Research about vaccines is not reliable
2. All pandemics are not to be feared
3. Pandemics keep occurring periodically
4. There is no solution for a pandemic

Answer: Option C

Explanation:

Option A:

In option A, it is stated that ‘Research about vaccines is not reliable’. But the author did not represent one such idea of the vaccines being not reliable in any part of the passage.

In the second paragraph, it is also presented that ‘Tools they created (related to germ theory and vaccination) *are still used to* identify and fight what Conniff calls “an astonishing rogues’ gallery of deadly pathogens”.’ From this statement it can be understood that the concept of vaccination is originally supported in the passage. As this idea contradicts the one given in option A, it cannot be the correct answer.

Option B:

In option B, it is stated that ‘All pandemics are not to be feared’.

If we consider the first paragraph, it is presented that ‘when the immediate crisis passes, we *put it out of our minds* as quickly as possible. And so, we again are *unprepared* when the next contagion - in this case, COVID-19 - bursts upon us.’

From these lines, it can be understood that according to the author, if we put the learnings from a crisis out of our minds, we become unprepared for the next one. So, the learnings are required to be retained to be prepared for the forthcoming crisis. This requirement also validates the fact that the upcoming crisis are also *associated with ill features*. In that case it is inappropriate to say that all pandemics are not to be feared. So, option B is not true according to the passage.

Option C:

Option C is given as: ‘Pandemics keep occurring periodically’.

In the first paragraph it is stated that, ‘No matter how often they occur - and *they do occur with great frequency* - we collectively refuse to think about them until circumstances demand it.’

From these lines, it can be understood that the statement ‘Pandemics keep occurring periodically’ is true according to the passage. So, option C is the correct answer.

Option D:

The statement given in option D is: ‘There is no solution for a pandemic’.

The second paragraph altogether describes solutions achieved for different pandemics in the past. In that case, the statement given in option D (There is no solution for a pandemic) is also not true according to the passage. So, it cannot be the correct answer.

Q5. In the fourth paragraph which pandemic is the author referring?

1. An unknown one
2. Small pox
3. COVID-19
4. Cholera

Answer: Option A

Explanation:

If we trace back to the fourth paragraph, it is stated that ‘It’s an important question for our planet. While we debate, *the next pandemic* draws nearer.’

Here the next pandemic refers to the *unknown one* which is yet to occur. So, option A (An unknown one) is the correct answer.

Q6. What does the writer imply that we should do?

1. Be vigilant about hygiene and health issues.
2. Wear masks when we step out of our homes.
3. Wash our hands and everything we touch carefully.
4. Maintain social distancing and avoid public gatherings.

Answer: Option A

Explanation:

If we consider the given options, in options B, C and D some specific actions of wearing masks, washing hands and maintaining social distancing are listed. But such specific course of actions (especially specific to the current pandemic of COVID-19) are not related in any part of the passage. So, these three options cannot be the correct answer.

Also, if we consider the first paragraph, it is stated that ‘No matter how often they occur - and they do occur with great frequency - we collectively *refuse to think* about them until circumstances demand it. Then, when the immediate crisis passes, we *put it out of our minds* as quickly as possible. And so we again are *unprepared* when the next contagion - in this case, COVID-19 - bursts upon us.’

From these lines it can be understood that according to the author our refusal to think about the issues until the circumstances demand makes us unprepared for the crisis. So, it is appropriate to say that the author urges us to be vigilant about hygiene and health issues. So, in all ways option A is the correct answer.

TCS NQT Programming Logic Questions

Here are the TCS NQT Questions under Programming Logic, asked in the previous NQT.

Q1. There are two integer numbers X and Y that are between 0 to 25. The user stores the value under a 5-bit number. How many minimum bits are required to store the result of the below expression?

Res=3*(X-Y)

A.8

B.5

C.7

D.8

Answer: Option D

Explanation: If we perform X-Y the possible answers shall be from -75 to 75. In order to store this, we need 8 bits.

Q2: Find Prefix and suffix for the below infix problem statement :

Infix Expression : 11 +20/5*(20-15)^6^5

A. Prefix Expression: 11 20 15 20 5 - ^^*6 5/+

Postfix Expression: +20/11*5-20^^15 6 5

B. Prefix Expression: 11 20 5 20 15-6 5^^*/+

Postfix Expression: +11/20 *5^^ -20 15 6 5

C. Prefix Expression: 11 20 5 20 15 - ^^^/+6 5

Postfix Expression: +11/^^-20*5 20 15 6 5

D. Prefix Expression: +11/20*5^^-20 15 6 5

Postfix Expression : 11 20 5 20 15 -6 5^^/+

Answer: Option D

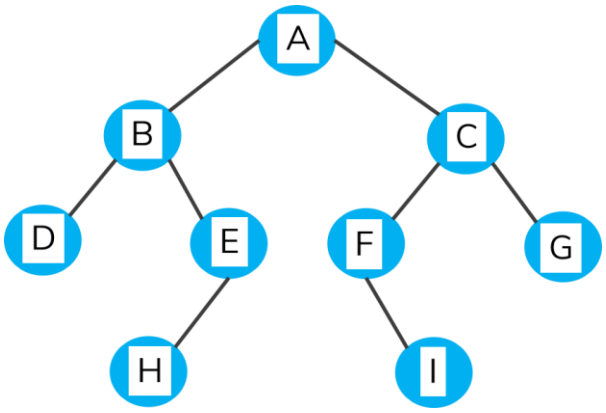
Explanation: Provided the Infix expression the equivalent prefix expression is +11/20*5^^-20 15 6 5 and equivalent postfix expression is 11 20 5 20 15 -6 5^^/+.

Q3. Write the name of a library of functions that is used to perform arithmetic operations on BigInteger and BigDecimal.

Answer: import java.math.*;

Explanation: java.math consists of all the required functions related to BigInteger and BigDecimal.

Q4. Consider the following tree. What will be the preorder traversal?



A. D H E B I F G C A

B. D H E B A F I G C

C. A B D E H C F I G

D. H I D E F G B C A

Answer: Option C

Explanation: In preorder traversal, we have to visit the root first and then left, and finally right.

Q5. Which argument is passed to fflush()?

A.no parameters

B.stdin

C.stdout

D.stderr

Answer: Option B

Explanation: In order to clear the input stream buffer we have to pass stdin to flush.

Q6. What is the name of the method that examines a particular data entity and determines what data elements need to be associated?

A. Entity-relationship diagram

B. Logic Data modeling

C. Customer Entities

D. Functional Primitive

Answer: Option A

Explanation: An ER diagram shows the relationship among entity sets. An entity set is a group of similar entities and these entities can have attributes. In terms of DBMS, an entity is a table or attribute of a table in the database, so by showing the relationship among tables and their attributes, ER diagram shows the complete logical structure of a database.

TCS NQT Coding Questions

Here are the TCS NQT Questions under the Coding section asked in the previous NQT.

Question #1: Sweet Seventeen

Given a maximum of four digit to the base 17(10 -> A, 11 -> B, 12 -> C, 16 -> G) as input, output its decimal value.

Input:

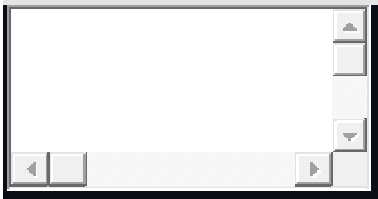
23GF

Solution and output:

C++

Java

Python 3



```
#include <iostream>
#include <math.h>
#include <string.h>

using namespace std;
int main(){
  char hex[17];
  long long decimal;
  int i = 0, val, len;
```

```
decimal = 0;
cin>> hex;
len = strlen(hex);
len--;

for(i = 0;hex[i]!='\0';i++)
{
  if(hex[i]>='0'&& hex[i]<='9'){
    val = hex[i] - 48;
  }
  else if(hex[i]>='a'&& hex[i]<='g'){
    val = hex[i] - 97 + 10;
  }
  else if(hex[i]>='A'&& hex[i]<='G'){
    val = hex[i] - 65 + 10;
  }
  decimal = decimal + val * pow(17,len);
  len--;
```

```
}
```

```
cout<< decimal;
```

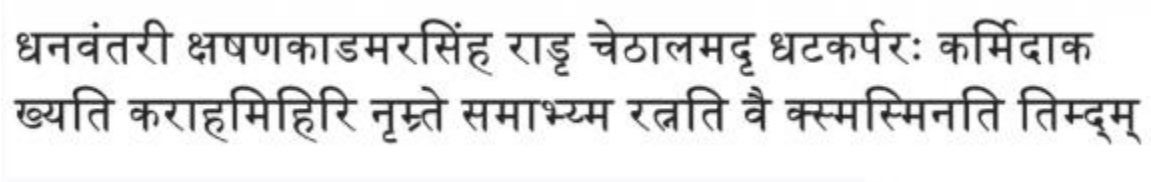
```
return 0;
}
```

Output

```
10980
```

Question #2: A Sober Walk

Our hoary culture had several great persons since time immemorial and king vikramaditya's nava ratnas (nine gems) belongs to this ilk.They are named in the following shloka:



Among these, Varahamihira was an astrologer of eminence and his book Brihat Jataak is recokened as the ultimate authority in astrology. He was once talking with Amarasimha,another gem among the nava ratnas and the author of Sanskrit thesaurus, Amarakosha. Amarasimha wanted to know the final position of a person, who starts from the origin 0 0 and travels per following scheme.

- He first turns and travels 10 units of distance
- His second turn is upward for 20 units
- Third turn is to the left for 30 units
- Fourth turn is the downward for 40 units
- Fifth turn is to the right(again) for 50 units

… And thus he travels, every time increasing the travel distance by 10 units.

Constraints:

2<=n<=1000

Input:

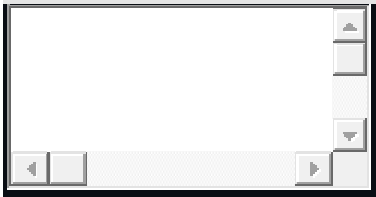
3

Solution and output:

C++

Java

Python 3



```
#include<iostream>
#include<stdlib.h>
using namespace std;
int main()
{
    int n;
    cin>>n;
```

```
    char c = 'R';
                                                                                9
    int x = 0, y = 0;
                                                                               10
    while(n){
                                                                               11
        switch(c){
                                                                               12
            case 'R':
                                                                               13
                x = abs(x) + 10;
                                                                               14
                y = abs(y);
                                                                               15
                c ='U';
                                                                               16
                break;
                                                                               17
            case 'U':
                                                                               18
                y = y + 20;
                                                                               19
                c = 'L';
                                                                               20
                break;
                                                                               21
            case 'L':
                                                                               22
                x = -(x + 10);
                                                                               23
                c = 'D';
                                                                               24
                break;
                                                                               25
            case 'D':
                                                                               26
```

```
        y = -(y);
                                                                                27

        c = 'R';
```

Output

```
-20 20
```

Question #3: Word is the key

One programming language has the following keywords that cannot be used as identifiers:

break, case, continue, default, defer, else, for, func, goto, if, map, range, return, struct, type, var

Write a program to find if the given word is a keyword or not

Input #1:

defer

Output:

defer is a keyword

Input #2:

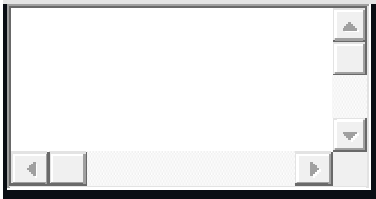
While

Solution and output:

C++

Java

Python 3



```
#include<iostream>
#include<string.h>

using namespace std;
int main(){

    char str[16][10] = {"break", "case", "continue", "default", "defer", "else","for",
    "func", "goto", "if", "map", "range", "return", "struct", "type", "var"};
    char input[20];
    int flag = 0;
    cin >> input;
    for(int i = 0; i<16;i++){
```

```
        if(strcmp(input,str[i]) == 0){
            flag = 1;
            break;
        }
    }
    if(flag==1){
        cout << input << " is a keyword";
    }
    else{
        cout << input << " is not a keyword";
    }
    return 0;
}
```

Output

```
while is not a keyword
```