Questions

1. What is the correct syntax of for loop?
   a. for(initialization;condition;increment/decrement)
   b. for(increment/decrement;initialization;condition)
   c. for(initialization,condition,increment/decrement)
   d. None of These

2. what is the difference between :
   a. while(n--){ }   and while(--n){ }
   b. for(int i=0;i<6;i++) and for(int i=0;i<6;++i)

3. Given three numbers n, a, and b, your task is to print the numbers from 1 to n that are divisible by a and not divisible by b.

   example : n= 15 a=2 b= 3;   output : 2 4 8 10 14

4. Given a number n, your task is to print the number after increasing every digit in the number by 1.

   example n=123456   output   234567

   example n=12920   output   23031

   Note: don't use string.

5. Given two numbers n and a, check if the number n is Almost prime or not.

   the number is Almost prime if it's not divisible by any

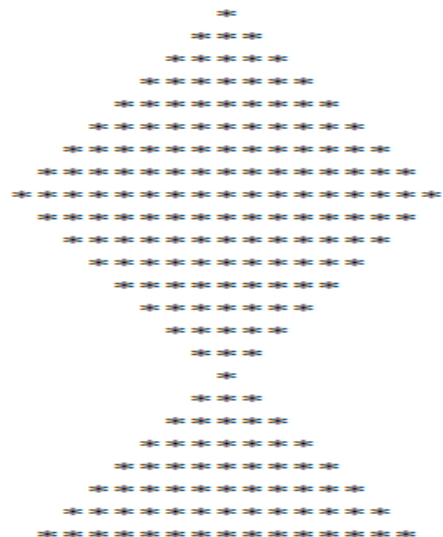   number form (2:n-1) except for a (it's divisible by a)

6. Given a number n, your task is to print the summation for every two opposite numbers.
   ● 1234567 ⇒
      ○ 1 is opposite to 7
      ○ 2 is opposite to 6
      ○ 3 is opposite to5
      ○ 4 is opposite to 4(itself).
   ● example 12376   output: 7

                                    9

                                    6

7. Given a number N, Print a Ramadan lantern as the following shape. (2<N<60)

8. How many turns does this loop make?

```cpp
#include<iostream>

using namespace std;

int main() {

    unsigned char n = 150;

    for (unsigned char i = 0; i < 2 * n; ++i) {

    }

}
```

9. How many turns does this loop make?

```cpp
#include <iostream>
using namespace std;
int main() {
    for (;;)
            cout << "blank";
    return 0;
}
```

10. What is the error here ?

```cpp
#include<iostream>

int main() {

  int i;

  for (i = 0; i < 100; i++);

    std::cout << i << std::endl;

}
```

11. What is the output?

A.

```cpp
#include<iostream>
using namespace std;
int main() {
    int counter = 0, i = 0;
    for (; ++i; i < 5) {

        counter++;

    }
    cout << counter;

}
```

a. 0.
b. 5.
c. Run time error.
d. infinite loop

B.

```cpp
#include<iostream>
using namespace std;
int main() {
    int counter = 0, i = 0;
    for (; i < 5; i++) {

        counter++;    }
    cout << counter;

}
```

a. 0.
b. 5.
c. Run time error.

d. Time limit.

C.

```cpp
#include<iostream>

using namespace std;

int main() {

    int counter = 0;

    for (int i = 0; i < 5; i++) {

            for (int j = i; j < 5; j++) {

                    for (int k = j; k < 5; k++) {

                            counter++;                  }   }   }

    cout << counter;

}
```

a. 35.
b. 0.
c. 125.
d. Time limit.

D.

Newcomers (*Loops*)

```cpp
#include<iostream>

using namespace std;

int main() {

    int counter = 0;

    for (int i = 0; i < 5; i++);

    {

        counter++;

    }

    cout << counter;

}
```

     a. 5.
     b. 0.
     c. 1.
     d. infinite loop

E.

```cpp
#include <iostream>
using namespace std;
int main() {
    int new = -10;
    cout << "new is       : "<<new;
    return 0;}
```

     a. new is: -10
     b. new is: 10
     c. Compilation Error
     d. new is: 0

F.

```cpp
#include <iostream>
using namespace std;
int main() {
    int i = 0, x = 0;
    do {
        if (i % 5 == 0) {
            cout << x;
            x++;
        }
        i++;
    } while (i < 10);
    cout << x;
    return 0;
}
```

a. 01
b. 012
c. 0
d. 01231

G.

```cpp
#include <iostream>
using namespace std;
int main() {
    int i = 0, x = 0;
    for (i = 1; i < 10; i *= 2) {
        x++;
        cout << x;
    }
    cout << x;
    return 0;
}
```

    a. 1234567899
    b. 12345678910
    c. 123455
    d. 12344

H.

Newcomers (*Loops*)

```cpp
#include <iostream>

using namespace std;

int main() {

    int i = 0, x = 0;

    for (i = 1; i <= 2; i++) {

        for (int j = i; j <= 2; j++) {

            cout << i << "@";

        }

    }

    return 0;

}
```

    a. 1@2@
    b. 1@2@1@
    c. 1@1@2@
    d. 1@2@2@

I.

```cpp
#include <iostream>

using namespace std;

int main() {

    int i = 0, x = 0;

    int x = 9;

    while (x > 0)

        x--;

    cout << x;

    return 0;

}
```

    a. 9876543210
    b. Error

        c. 9

        d. 0

Answers

1. a. for(initialization;condition;increment/decrement)

2. try it and answer

3. to 7 ⇒ [The solutions are on GitHub](#)

8. Infinite Loop

> **Explanation**: If your answer is 300, then it would be correct if i was declared as int.since i was declared as an unsigned char. The correct answer is that this code will run as an infinite loop. Here's why: The expression 2 * half limit will be cast to int (based on the C++ conversion rules) and will have a value of 300. However, since i is an unsigned character, it is represented by an 8-bit value, after reaching 255, it will overflow

9. Infinite loop

10.   There is no error, but there might be a logical error if you think that the code will print numbers from 0 to 99 - (notice the ';' after the for loop statement)

      so the output is "100"

11.

  A. d.infinite loop
  B. b. 5
  C. a. 35
  D. c. 1
  E. c. Compilation Error (new is a keyword in c++)

  F. b. 012
  G. d. 12344
  H. c. 1@1@2@
  I. b. Error => redeclaration of 'int x'