EXCEPTION HANDLING

1.   What will be the output of the Program 4a and 4b below?

```
//Program 4a
#include <iostream>
using namespace std;
int main()
{   int a = 10, b = 20, c = 30;
    float  d;
    try
    {   if ((a - b) != 0)
        {   d = c / (a - b);
            cout << d;    }
        else
        {   throw(a - b);    }
    }
    catch (int i)
    {   cout<<"Answer is infinite "<<i;    }
}
```

Output:

```
//Program 4b
#include <iostream>
using namespace std;

void PrintSequence(int StopNum)
{
    int Num;
    Num = 1;

    while (true)
    {
        if (Num >= StopNum)
            throw Num;
        cout << Num << endl;
        Num++;
    }
}

int main(void)
{
    try
    {
        PrintSequence(2);
    }
    catch(int ExNum)
    {
        cout << "exception: " << ExNum << endl;
    }
    return 0;
}
```

Output:

2. Try the Program 4c given below for these input values: /, +, =

```cpp
//Program 4c
#include <iostream>
#include <string>
using namespace std;

int main()
{
    double Oprn1 = 10, Oprn2 = 5, Result;
    char Op;
    cin >> Op;

      try
        {
            if (Op != '+' && Op != '-' && Op != '*' && Op != '/')
                throw Op;
            switch(Op)
            {
                case '+': Result = Oprn1 + Oprn2; break;
                case '-': Result = Oprn1 - Oprn2; break;
                case '*': Result = Oprn1 * Oprn2; break;
                case '/': Result = Oprn1 / Oprn2; break;    }

            cout << "\n" << Oprn1 << " " << Op << " "<< Oprn2 << " = " <<
Result;    }

      catch (const char n)
    {    cout << n << " is not a valid operator";    }

    return 0;
}
```

Output for /:

Output for +:

Output for =:

3. Write a function (named `findValue`) that searches a numeric array (named `array`) for a specified value (named `value`). The function should return the subscript (named `subscript`) of the element containing the value if it is found in the array. If the value is not found, the function should throw an exception with the message : "ERROR: Value not found". The size of the array is `SIZE`.

Answer:

4. What are the output for the following Program 4d and 4e below?

```cpp
//Program 4d
#include <iostream>
using namespace std;

class Test {
  static int count;
  int id;
public:
  Test() {
    count++;
    id = count;
    cout << "Constructing object number " << id << endl;
    if(id == 4)
        throw 4;
  }
  ~Test() { cout << "Destructing object number " << id << endl; }
};

int Test::count = 0;

int main() {
  try { Test array[5];  }
  catch(int i) { cout << "Caught " << i << endl; }
}
```

Output:

```
//Program 4e
#include <iostream>
using namespace std;

void test(int x)
{   try
    {   if (x > 0)
            throw x;
        else
            throw 'x';
    }

    catch(int x)
    {   cout<<"integer: "<<x;   }

    catch(char x)
    {   cout << "\ncharacter: " << x;    }

}

int main()
{
   test(10);
   test(0);
}
```

Output: