1

Write the output of the following program. Each line should be written in the corresponding textbox. There are 10 textboxes. If there are more than 10 outputs, only write the first 10. If there are fewer than 10 outputs, write 'x' (lowercase, no quotations, no whitespaces) in the empty textboxes.

Code:

```
#include <iostream>
using namespace std;

int main() {
    int arr[] = {5, 12, 15, 7, 8, 0, 4, 1, 2, 9};
    char arr2[] = {'G', 'O', 'S', 'P', 'A', 'R', 'T', 'A', 'N', 'S'};
    int size = 9;
    for (int i = 0; i <= size; i++) {
        if (arr[i] % 2 == 0) {
            arr2[i] += arr[i] / 2 + 1;
        } else if (arr[i] % 4 == 0) {
            arr2[i] += arr[i] * 2;
        } else if (arr[i] % 3 == 0) {
            arr2[i] -= arr[i];
        } else {
            arr2[i] += i % 3;
        }
    }
    for (int i = size; i >= 0; i--) {
        cout << arr2[i] << endl;
    }
    return 0;
}
```

Output:

```
J
P
B
W
S
F
P
D
V
G
```

2

Write the output of the following program. Each line should be written in the corresponding textbox. There are 10 textboxes. If there are more than 10 outputs, only write the first 10. If there are fewer than 10 outputs, write 'x' (lowercase, no quotations, no whitespaces) in the empty textboxes.

Code:

```
#include <iostream>
using namespace std;

void func(int &a, int &b, int &c) {
    int temp = b;
    b = c;
    c = temp;
}

int main() {
    int x = 11, y = 6, z = 7;
    int &p = y;
    int &q = y;
    int *r = &x;
    cout << *r << endl;
    q = z + q - 9;
    cout << ++p << endl;
    cout << q-- << endl;
    func(p, q, *r);
    cout << p << endl;
    cout << q << endl;
    cout << *r << endl;
    func(*r, ++p, ++q);
    cout << p << endl;
    cout << q << endl;
    cout << *r << endl;
    return 0;
}
```

Output:

```
11
5
5
11
11
4
13
13
4
x
```

3

Write the output of the following program. Each line should be written in the corresponding textbox. There are 10 textboxes. If there are more than 10 outputs, only write the first 10. If there are fewer than 10 outputs, write 'x' (lowercase, no quotations, no whitespaces) in the empty textboxes.

Code:

```
#include <iostream>
using namespace std;

int main() {
    string str = "Tennessee";
    for (int i = str.size() - 6; i >= 0 ; i--) {
        cout << str.substr(i, i + 1) << endl;
    }
    for (int i = str.size() - 7; i >= 0 ; --i) {
        cout << str.substr(str.find("e", i), str.find("e", i + 1)) << endl;
    }
    for (int i = 1; i < str.size() - 1; i *= 2) {
        cout << str.find(str.at(i), i + 1) << endl;
    }
    return 0;
}
```

Output:

```
ness
nne
en
T
esse
enne
e
4
3
7
```

4

Write the output of the following program. Each line should be written in the corresponding textbox. There are 10 textboxes. If there are more than 10 outputs, only write the first 10. If there are fewer than 10 outputs, write 'x' (lowercase, no quotations, no whitespaces) in the empty textboxes.

Code:

```
#include <iostream>
using namespace std;

class A {
    private:
        int x;
    public:
        A() : x(5) {}
        A(int val) : x(val) {}
        A(const A &a) : x(a.x) {}
        void F1() { x -= 5; }
        void F2() { x *= 3; }
        void F3() { x /= 2; }
        int F4() const { return x; }
};

int main() {
    A obj1;
    A obj2(2);
    A obj3(obj1);
    obj1.F2();
    cout << obj1.F4() << endl;
    obj1.F3();
    cout << obj1.F4() << endl;
    obj1.F1();
    cout << obj1.F4() << endl;
    obj2.F3();
    cout << obj2.F4() << endl;
    obj2.F2();
    cout << obj2.F4() << endl;
    obj2.F3();
```

```
    cout << obj2.F4() << endl;
    obj3.F1();
    cout << obj3.F4() << endl;
    obj3.F2();
    cout << obj3.F4() << endl;
    A obj4(obj2);
    obj4.F1();
    cout << obj4.F4() << endl;
    obj4.F2();
    cout << obj4.F4() << endl;
    return 0;
}
```

Output:

```
15
7
2
1
3
1
0
0
-4
-12
```