

Activity-3

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Q1:

Given the array:

```
int a[4] = {3, 6, 9, 12};
```

What will be the output of this code?

```
cout << a[0] + a[3];
```

Output = 15

Q2: Predict output

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

int main() {
    int a[3] = {10, 20, 30};
    a[1] = a[0] + a[2];
    cout << a[1];
    return 0;
}
```

a[1]=40

Q3: Predict output

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

int main() {
    int num[5] = {1, 3, 5, 7, 9};
    cout << num[4 - 2];
    return 0;
}
```

num[2]=5

Q4: Predict output

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

int main() {
    int a[4] = {2, 4, 6, 8};
    for(int i = 0; i < 4; i++)
        cout << a[i] + 1 << " ";
    return 0;
}
```

Output= 3 5 7 9

Q5: Predict output

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

int main() {
    int val[5] = {2, 4, 6, 8, 10};
    int sum = 0;
    for(int i = 1; i < 4; i++)
        sum += val[i];
    cout << sum;
    return 0;
}
```

Answer:

18

(4 + 6 + 8)

Q5: Predict output

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

int main() {
    int a[5] = {1, 2, 3, 4, 5};
    a[0] = a[4];
    a[4] = a[0] + a[1];
    cout << a[4];
    return 0;
}
```

Answer:

7

(Step 1: a[0]=5, Step 2: a[4]=5+2=7)

Bonus Question

Create a **do–while loop** that repeatedly asks the user for a password until "1234" is entered. Then print "Access Granted"

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

int main() {
    string password;
    do {
        cout << "Enter password: ";
        cin >> password;
    } while (password != "1234");

    cout << "Access Granted!";
    return 0;
}
```


Bonus Question

Find the factorial of a number using a **for loop**.

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

int main() {
    int n, fact = 1;
    cout << "Enter a number: ";
    cin >> n;

    for (int i = 1; i <= n; i++)
        fact *= i;

    cout << "Factorial = " << fact;
    return 0;
}
```

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

int main() {
    int n, fact = 1;
    cout << "Enter a number: ";
    cin >> n;

    for (int i = n; i >= 1; i--)
        fact *= i;

    cout << "Factorial = " << fact;
    return 0;
}
```

Bonus Question

Write a short C++ program that reads three integers from the user and prints:
The largest number among them **without using any if statements**.
Use logical operators (&&, ||)

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

int main() {
    int a, b, c;
    cout << "Enter three numbers: ";
    cin >> a >> b >> c;

    // Logical/Arithmetic trick: choose larger value step by step
    int largest = (a > b && a > c) * a +
                  (b >= a && b >= c) * b +
                  (c > a && c > b) * c;

    cout << "Largest number = " << largest << endl;
    return 0;
}
```

Bonus Question

Write a program that:

Takes an integer input from the user.

If it's positive, print numbers from 1 to that number using a for loop.

If it's negative, print "Invalid number".

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

int main() {
    int n;
    cout << "Enter a number: ";
    cin >> n;

    if (n > 0) {
        for (int i = 1; i <= n; i++) {
            cout << i << " ";
        }
    } else {
        cout << "Invalid number";
    }

    return 0;
}
```

Bonus Question

Write a program that:

Write a C++ code to find the **largest number** in an array of 6 integers.

```
int arr[6]={4,6,3,7,2,1}
int max = arr[0];
for(int i = 1; i < 6; i++) {
    if(arr[i] > max)
        max = arr[i];
}
```