1. #include <iostream>

using namespace std;

int main() {

    int N;

    cout << "Enter the number of terms (N): ";

    cin >> N;

    int term = 0;

    cout << "Number Series: ";

    for(int i = 1; i <= N; ++i) {

        term = term + i;  // Adding current index to previous term

        cout << term << " ";

    }

    return 0;

}

2. #include <iostream>

using namespace std;

int main() {

    int N;

    cout << "Enter the number of terms (N): ";

    cin >> N;

    int term = -1;

    cout << "Series: ";

    for(int i = 1; i <= N; ++i) {

        cout << term << " ";

        term = term + 3;

        term = -term;  // Alternate the sign

    }

    return 0;

}

3. #include <iostream>

using namespace std;

int main() {

    int N;

    cout << "Enter the number of terms (N): ";

    cin >> N;

    cout << "Series: ";

    for(int n = 1; n <= N; ++n) {

        int term = 3 \* n \* n + 2 \* n - 3;

        cout << term << " ";

    }

    return 0;

}

4. #include <iostream>

using namespace std;

int main() {

    int N;

    cout << "Enter the number of terms (N): ";

    cin >> N;

    int term = 0;

    cout << "Series: ";

    for (int i = 1; i <= N; i++) {

        cout << term << " ";

        // Update term based on alternating pattern

        if (i % 3 == 1)

            term += 6;

        else if (i % 3 == 2)

            term += 4;

        else

            term += 7;

    }

    return 0;

}

5. #include <iostream>

using namespace std;

int main() {

    int N;

    cout << "Enter the number of terms (N): ";

    cin >> N;

    int oddTerm = 10;  // starting from 1st term

    int evenTerm = 5;  // starting from 2nd term

    cout << "Series: ";

    for (int i = 1; i <= N; i++) {

        if (i % 2 != 0) {

            cout << oddTerm << " ";

            oddTerm += 50;

        } else {

            cout << evenTerm << " ";

            evenTerm += 10;

        }

    }

    return 0;

}