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#include <iostream>
#include <cmath>

using namespace std;

int geometricSequence(int intTerm, int intRatio, int intCurrent);

int main()
{
    bool boolContinue = true;

    char chOption;

    do
    {
        cout << endl;

        cout << "Option A: Geometric Sequence" << endl
             << "Option B: Countint Sequence" << endl
             << "Option C: Reverse Word" << endl
             << "Option X: Exit: ";

        cin >> chOption;

        switch(chOption)
        {
            case 'A':
            case 'a':
            {
                int intNumTerms;
                cout << "How many terms do you want: ";
                cin >> intNumTerms;

                int intRatio;
                cout << "What is your common ration: ";
                cin >> intRatio;

                int intFirstTerm;
                cout << "What is you first term: ";
                cin >> intFirstTerm;

                int intGeometric;
                cout << "Geometric Sequence: " << endl;

                for(int i = 1; i <= intNumTerms; i++)
                {
                    intGeometric = geometricSequence(intFirstTerm, intRatio, i);
                    cout << intGeometric << ", ";
                }

                break;
            }

            case 'B':
            case 'b':
            {
                int intStart, intEnd, intStep;

                cout << "What is you initial value: ";
```

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                cin >> intStart;

                cout << "What is your final value: ";
                cin >> intEnd;

                cout << "What is you step value: ";
                cin >> intStep;

                cout << "Counting Sequence: " << endl;
                if(intStep >= 0)
                {
                    while(intStart <= intEnd)
                    {
                        cout << intStart;
                        intStart += intStep;

                        if(intStart <= intEnd) cout << ", "; // Avoid a trailing
comma in the end
                    }
                }else if(intStep <= 0)
                {
                    while(intEnd <= intStart)
                    {
                        cout << intStart;
                        intStart -= intStep;

                        if(intEnd <= intStart) cout << ", ";
                    }
                }else
                {
                    cerr << "Invalid option" << endl;
                }
                cout << endl;

                break;
            }

            case 'C':
            case 'c':
            {
                string strWord;

                cout << "Enter a word: ";
                cin.ignore();
                getline(cin, strWord); // using getline allows to capture also
spaces
                string strReverse;

                for(char c : strWord)
                {
                    strReverse = c + strReverse;
                }

                cout << "Reverse word: " << strReverse << endl;
                break;
            }

            case 'X':
            case 'x':
```

```
            {
                cout << "Thank you for playing" << endl;
                boolContinue = false;
                break;
            }

            default:
            {
                cerr << "Invalid option. Please try again ..." << endl;
                break;
            }

        }
    } while (boolContinue);

    return 0;

}

int geometricSequence(int intTerm, int intRatio, int intCurrent)
{
    int intResult;
    intResult = intTerm * (pow(intRatio, (intCurrent - 1)));
    return intResult;
}
```