Base Converter

Assignment:
For this assignment you'll be designing a program which can take the input of a decimal number and a numerical base, and convert the decimal number to that base. For example, if given the decimal number seven and the base two, your program should output it as 111, which is how seven is represented in binary. Another example, 8,943 in base 10, is 13,236 in base 9.
You'll need to perform these operations on the following combinations:

A: 15, base 2.
B: 38, base 16.
C: 54, base 6.
D: 19, base 8.
E: 27, base 3.

(100 pts total: 50 points for code, 10 points for each output)

Code:

```
// Name: Dawlat Hamad
// ID: GV5450
// Lab 4 - Base Converter
// Source 1: https://stackoverflow.com/questions/21832886/converting-letters-to-numbers-in-c
// Source 2: https://www.tutorjoes.in/cpp_programming_tutorial/convert_decimal_to_binary_using_while_loop_in_cpp


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

int main()
{
   //Declare Variables
   int number;
   int base;
   int x;
   string letter;
   string answer;

   cout << endl;
   cout << "This program will take a given decimal number and output in the given base." << endl;

   // Prompt user for input
   cout << "Decimal Number: ";
```

```
    cin >> number;
    cout << "Base: ";
    cin >> base;

    // Converter: Base 10 to given base
    while (number != 0)
    {
        x = number % base;

        //For base 16, prints letters for 9 > x > 0
        if (x < 10)
            letter = '0' + x;
        else
            letter = x - 10 + 'A';

        answer = letter + answer;

        number /= base;
    }

    // Prints Output
    cout << "Answer: " << answer << endl;
    cout << endl;

    return 0;
}
```

Output:

```
This program will take a given decimal number and output in the given base.
Decimal Number: 54
Base: 6
Answer: 130

This program will take a given decimal number and output in the given base.
Decimal Number: 38
Base: 16
Answer: 26

This program will take a given decimal number and output in the given base.
Decimal Number: 15
Base: 2
Answer: 1111

This program will take a given decimal number and output in the given base.
Decimal Number: 19
Base: 8
Answer: 23

This program will take a given decimal number and output in the given base.
Decimal Number: 27
Base: 3
Answer: 1000
```