Practice questions v6: Functions

In all the questions, your main function should not contain any code except function calls. Declare the relevant variables inside respective functions. Return the answer (if any thing needs to be returned) to the main function.

1. Write a program that takes as input five numbers and outputs the standard deviation of the numbers. If the numbers are x_1, x_2, x_3, x_4, and x_5, then the standard deviation is:

$$s = \sqrt{\frac{(x_1 - x)^2 + (x_2 - x)^2 + (x_3 - x)^2 + (x_4 - x)^2 + (x_5 - x)^2}{5}}$$

   Your program must contain a function that calculates the standard deviation.
2. Calculate average and percentage of 5 subjects' marks. Make separate function for average and percentage.
3. Convert Fahrenheit to centigrade. Make a function that takes input in centigrade and convert it into Fahrenheit. The function should return the temperature in Fahrenheit to the main function.
4. Find area of triangle. Design a function **FindArea** to do so.
5. Write a function that prints the following pattern on the screen. Use nested loops to design the pattern. *Hint: To print alphabets, you can use ASCII values of upper case alphabets to start with the loop.*

```
                1
            A   B
        2   3   4
    C   D   E   F
5   6   7   8   9
```

Just for reference, the following code has two loops. You can use any of these loops to print first three lower case alphabets (abc) on the console.

```
#include <iostream>
using namespace std;
int main()
{
	for (int i = 97; i < 100; i++)
		cout << (char)i;

	cout << endl;

	for(char c='a';c<'d';c++)
		cout << c;
	return 0;
}
```