1. The below program (figure 1) creates an object called "printer" in a class called "PrintClass" and then uses the object to print text. Your task is to write the class "PrintClass" and the required method. Sample print is in figure 2.

```
1    #include <iostream>
2    #include <string>
3    using namespace std;
4
5    // your code here
6
7    int main()
8    {
9        char charstring[50];
10       cout << "Input a character string for printing:";
11       cin.get(charstring, 50);
12       PrintClass printer;
13       printer.print(charstring);
14   }
```

Figure 1. The frame of code
http://users.metropolia.fi/~pasitr/2016-2017/TI00AA50-3010/tt/02/1.cpp

Example output:

```
Input character string for printing:second test
second test
```

Figure 2. Sample print

2. Below (figure 3) is a simpler version of the previous program but the idea is still the same. Program creates an object names "thing", which is an instance of the class "AskAndPrint". Your task is to write the class "AskAndPrint" and create a method "DoYourThing()" that receives the string from the variable "text", prints it's contents, reads user input and prints it on screen. Write only the missing class in the below text box. The functionality of the complete program can be seen in the example print (figure 4). Tip: User may input spaces so reading simply cin >> text; is not enough.

```
1    #include <iostream>
2    #include <string>
3    using namespace std;
4
5    // your code here
6
7    int main (void)
8    {
9        char charstring[] = "Write the text for printing:";
10       AskAndPrint thing;
11       thing.DoYourThing(text);
12   }
```

Figure 3. The frame of code
http://users.metropolia.fi/~pasitr/2016-2017/TI00AA50-3010/tt/02/2.cpp

Example output:

```
Write the text for printing:second example
second example
```

Figure 4. Sample print

3. In the exercise both the main program and the class "Calculator" have been completed. Your task is to make up class "Printer" that asks the user for two integers, calls for the class "Calculator" method "Sum()" transferring the integers received as input to the method. Method "Sum()" calculates the sum of the integers and returns the result. At the end method "Print()" prints the given sum on screen. I.e. the code below doesn't need to be copied to the answer field.

```cpp
1    #include <iostream>
2    using namespace std;
3
4    class Calculator
5    {
6       public:
7
8       int Sum(int first, int second);
9    };
10
11   int Calculator::Sum(int first, int second)
12   {
13      int sum =first + second;
14      return sum;
15   }
16
17   // your code
18
19   int main()
20   {
21      Printer object;
22      object.Print();
23   }
```

Figure 5. The frame of code
http://users.metropolia.fi/~pasitr/2016-2017/TI00AA50-3010/tt/02/3.cpp

Example output:

```
Give a first integer: 23
Give a second integer: 79
Sum: 102
```

Figure 6. Sample print

4. Below (figure 7) you can find class "Dog" that is lacking a starting method needed for constructing objects and methods PrintInformation() and Bark(). Make additions to the class so that it becomes possible to construct objects from class. Also make up the missing methods. While being constructed the object will be given values: age, name, race and voice. The C++ program (figure 8) uses Dog class printing a print like the example print on screen. Example output is in figure 9.

```cpp
1  class Dog {
2      int age;
3      string name, race, voice;
4      // constructor
5      // method PrintInformation()
6      // method Bark()
7  }
```

Figure 7. Definition of class Dog

```cpp
1   #include <iostream>
2   #include <string>
3   using namespace std;
4
5   // your code
6
7   int main()
8   {
9      Dog buffy(2, "Buffy", "Bulldog", "Hau!!!");
10     buffy.PrintInformation();
11     cout << "Dog says: " << buffy.Bark();
12  }
13
```

Figure 8. The frame of code
http://users.metropolia.fi/~pasitr/2016-2017/TI00AA50-3010/tt/02/4.cpp

Example output:

```
Name: Buffy
Age: 2
Race: Bulldog
Dog says: Hau!!!
```

Figure 9. Sample print

5. Write a class having two private variables and one member function which will return the area of the rectangle. Write also function main where you can give values to variables and where you call function area. Example output is in figure 10.

```
Enter length of rectangle:2
Enter breadth of rectangle:3
Area:6
--------------------------------
Process exited with return value 0
Press any key to continue . . . _
```

Figure 10. Sample print

6. Write a program and input two integers in main and pass them to default constructor of the class. Show the result of the additon of 2 numbers. Sample print is in figure 11.

```
Enter first number : 3
Enter second number : 4
numbers initialized
The addition result on:7


--------------------------------
Process exited with return value 0
Press any key to continue . . .
```

Figure 11. Sample print