



Write a program that asks the user to enter the radius of a circle and then calculates and displays the surface area of the circle. Note: The area of a circle may be calculated with the following equation:

$$A = \pi r^2$$

Quizzes



Name:

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Write a program that asks the user to enter a word (may consist of upper and lower case letters and numerals) and displays the word in all upper case.

What will be displayed by the following program?

```
1 #include <iostream>
2 using std::cout;
  using std::endl;
4 #include <iomanip>
  using std::ios;
6 using std::setw;
  using std::setiosflags;
8 using std::setprecision;

10 int main()
   {
12     const double pi = 3.1415927;

14     cout << setiosflags(ios::fixed) << setiosflags(ios::right);
      for(int i=0; i<10; ++i) {
16         cout << setprecision(i) << setw(12) << pi << endl;
      }
18
20     return 0;
   }
```



A function should be written that accepts two integers (`low` and `high`) and returns one integer (entered by the user). The function should ask the user to enter a number between `low` and `high`. If the user enters a number outside of that range, they should be asked to enter a number in the correct range (repeatedly, until a valid number has been entered). Once a valid entry has been made, the function should return the value of the valid entry.

**(a)** (3 points) Write the function prototype.

**(b)** (7 points) Write the function.



1. (5 points) Briefly, and in your own words, describe what happens when a parameter is passed to a function by value.

2. (5 points) Briefly, and in your own words, describe what happens when a parameter is passed to a function by reference.

Implement the function `average` used in the following program.

```
1 #include <iostream>
2 #include <fstream>
3 #include <vector>
4
5 double average(const std::vector<double>& numbers);
6
7 int main()
8 {
9     std::ifstream fin("numbers");
10    double number;
11    std::vector<double> nums;
12    while(fin >> number) {
13        nums.push_back(number);
14    }
15    std::cout << "The average of all the numbers is " << average(nums) << std::endl;
16    return 0;
17 }
```

The following is an implementation of the `getInt` function described in class. Describe how this function could be modified so that it would extract the first integer from what the user enters. Examples:

User enters:	Function returns:
32 31 30	32
eight I said 8	8
eighteen, 18 I said	18
Eighty80eighty79+1	80

```
1 #include <string>
2 #include <iostream>
3 #include <sstream>
4 #include "usings.h" // Contains all appropriate using std::... directives
5
6 int getInt(const string& prompt)
7 {
8     string input;
9     int retVal;
10    bool done=false;
11    do {
12        cout << prompt;
13        getline(cin, input);
14        istringstream istr(input);
15        if(istr>>retVal)
16            done=true;
17    } while(!done);
18
19    return retVal;
20 }
```