

CSCI 1370

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The point of these exercises is to allow you to evaluate whether you have learned the material from the past week, and to direct you in additional studying outside of class. These are exactly the types of questions that will show up on your final. These are due on Tuesday at class, printed or written.

My advice is to figure it out on paper, using your book or other resources, and then verify your answer by running the code. If you really want to learn the material, try variations and make sure you understand why the behavior changes the way it does.

Review exercises: using and writing functions

1. Given the function heading:

```
double perform_bleargh( int a, string b, int b )
```

And the variables:

```
int x = 6;  
string s = "I drank what?";
```

Which of the following statements are valid?

- a. `perform_bleargh(4, s, x);`
- b. `x = perform_bleargh(4, "Et tu", 19);`
- c. `perform_bleargh(x, s);`
- d. `s = perform_bleargh(x, s, x);`
- e. `cout << perform_bleargh(14, s, 31);`
- f. `cout << perform_bleargh(1, 2, 3);`

Answers:

- a. valid
- b. valid
- c. invalid, wrong number of parameters
- d. invalid, wrong return type
- e. valid
- f. invalid, second parameter has to be a string

2. Write the *heading only* for a function called `count_chars` that takes a string and a character as parameters and returns the number of times the character appears in the string (e.g. the character 'a' appears 2 times in the string "alphabet").

```
int count_chars( string s, char c )
```

3. Given the string variable `my_name` and the integer variable `x`, write a C++ statement that calls the `count_chars` function to count the number of times the letter 'e' appears in `my_name` and stores that number in `x`.

```
x = count_chars( my_name, 'e' );
```

4. Write the function definition for a function that multiplies two doubles together.

Answer:

```
double mult( double a, double b )  
{  
    return a * b;  
}
```

5. Using the function you wrote in question 2 (do not define a new function), complete the code below. In this question you cannot use the multiplication operator (*), only your function.

```
double x=4.0, y=4.0, z=4.0;  
double product;
```

```
// multiply x times y times z and store the result in product
```

Answer:

```
product = mult( x, y );  
product = mult( product, z );
```

6. Write a function definition for a function that asks the user to enter a number and prints the number they entered to the screen.

Answer:

```
void echo_number()
{
    double num;

    cout << "Please enter a number: ";
    cin >> num;

    cout << num;
    cout << endl;
}
```

7. Write a function definition for a function that asks the user to enter a number and **returns** the number they entered.

Answer:

```
double get_number()
{
    double num;

    cout << "Please enter a number: ";
    cin >> num;

    return num;
}
```