1. Write a single statement to accomplish each of following tasks:
   (a) Use a stream manipulator to ensure that floating-point values print in scientific notation for when using `cout`.
   (b) Use a stream manipulator to set the fill character to `'*'` for printing in field widths larger than the values being output using `cout`.
   (c) Print `6789` right justified in an 8-digit field.

2. Write a C++ statement that uses the manipulator `setfill` to output a line containing 40 pound signs, i.e., "`########################################`".

3. Identify error(s), if any, in the following array declarations. If a statement is incorrect, provide the correct statement.
   (a) `double weights[100];`
   (b) `int age[0..80];`
   (c) `int100 list[];`
   (d) `double[50] salaries;`

4. Correct the following code so that it correctly sets the value of each element of `myList` to the index of the element.

```
int myList[10];
for (int i = 1; i <= 10; i--)
    myList[i] = [i];
```

5. What is stored in `list` after the following C++ code executes?

```
int list[10];

list[0] = 2;
list[1] = 3;
for (int i = 2; i < 10; i++)
{
    list[i] = list[i - 1] + list[i - 2];
    if (i > 7)
       list[i] = 2 * list[i] - list[i - 2];
}
```

6. Determine whether the following array declarations are valid. If a declaration is valid, determine the size of the array.
   (a) `int list[] = {18, 13, 14, 16};`
   (b) `int x[10] = {1,7,5,3,2,8};`
   (c) `double y[4] = { 2.0, 5.0, 8.0, 11.0, 14.0} ;`
   (d) `int list[7] = {12, 13, , 14, 16, , 8};`

7. Write a single statement for each of the following one-dimensional array operations:
   (a) Initialize the 10 elements of integer array `counts` to zero.
   (b) Add 1 to each of the 15 elements of the integer array `bonus`.
   (c) Read 12 values for `double` array `scores` from the keyboard.

8. Write a code segment that finds the minimum and maximum values contained in a 99-element `double` array `w`.

9. Write a code segment that finds the minimum and maximum values contained in a 4-by-6 `int` array `t`. (The declaration for `t` is `int t[4][6];`)

10. Consider the following C++ code:

```
string str1;
string str2;
char ch;
int index;
cin >> str1;
cin >> str2;
cin >> index;
ch = str1[index];
str1[index] = str2[index];
str2[index] = ch;
cout << str1 << " " << str2 << endl;
```

Answer the following questions:

(a) What is the output if the input is `Hello There 2`?
(b) What is the output if the input is `Diamond Gold 0`?
(c) What is the output if the input is `C++ Java 1`?

11. What is the output of the following C++ code?

```
string str1 = "Trip to Hawaii";
string str2 = "Summer or Fall";
string newStr;
newStr = str2 + ' ' + str1;

cout << newStr << endl;
cout << str1 + " in " + str2 << endl;
cout << newStr.length() << endl;
cout << str1.find('H') << endl;
cout << str2.find("or") << endl;
cout << newStr.substr(10, 19) << endl;
cout << newStr.replace(23, 6, "******") << endl;

string str = "C++ Programming";
cout << str << endl;
cout << str.length() << endl;

str[0] = 'J';
str[2] = '$';

cout << str << endl;
```

12. Find the error(s) in each of the following, and explain how to correct it (them):

(a) `string string1( 28 );  // construct string1`
(b) `string string2( 'z' );  // construct string2`