1. (5 Points) What will be the values of array data after completing the loop.

```c
for ( i = 0;   i < 5;  i++)
{
    data[i] = i*i;
    data[i] += i;
}
```

2. (5 Points) What will be the values of array data after completing the loop.

```c
for ( i = 0;   i < 5;  i++)
    for(j=0; j<5; j++)
    {
        if( i % 2 == 1)
            data[i][j] = 0;
        else
            data[i][j] = i*j;
        data[i][j] -= j;
    }
```

3. (5 Points) What will be the value of sum and sum1 after completing the loop.

```c
sum = 0;
sum1 =0;
for ( i = 0;   i < 5;  i++)
    for(j=0; j<5; j++)
    {
        data[i][j] = i + 2* j;
        if ( i == 0) sum += data[i][j];
        if ( j == 0) sum1 += data[i][j];
    }
```
**NEXT THREE PROBLEMS ARE PROGRAMMING EXERCISES**

4. (20 Points) Write a program to declare one 2 dimensional array of size 7X7 which can store integer type of values. Using random numbers set the values of the array between the range of 0 to 10 and now retain the values of elements on the border of this array and set all other elements to zero.

Hint: The first and last row’s elements are not changed. The first and last column’s elements are not changed. All other elements are set to zero. Print the original array and the final array.

5. (25 Points) Write a program to declare one 2 dimensional array of size 10x10 which can store integer type of values. Using random numbers set the values of this array between the range of 0 to 100 and now do the following:

- If the value of an element is between 0 and 10 then reset it to the value 0.
- If the value of an element is between 11 and 20 then reset it to the value 1.
- If the value of an element is between 21 and 30 then reset it to the value 2.
- If the value of an element is between 31 and 40 then reset it to the value 3.
- If the value of an element is greater than 40 then reset it to the value 4.

Use CASE statement to achieve this. Print the original and final array.

6. (20 points) Change the isPalindrome program in section 6.1.1 on page 191 of the text, to ignore space characters. If the letters are of different case then that also does not matter. Therefore “e Ye” would still be a palindrome, or “A man a plaN a Canal Panama” would also be a palindrome.