Exercises

1. What are the subscript ranges of the following arrays?

   (a) `int array1[6] ;`
   (b) `float array2[] = { 1.3, 2.9, 11.8, 0 } ;`
   (c) `int array3[6][3] ;`
   (d) `int array4[][4] = { { 6, 2, 1, 3 } , { 7, 3, 8, 1 } } ;`

2. Write statements to define each of the following:
   (a) a one-dimensional array of floating-point numbers with ten elements
   (b) a one-dimensional array of characters with five elements
   (c) a two-dimensional array of integers with seven rows and eight columns
   (d) a 10 by 5 two-dimensional array of double precision numbers
   (e) a 10 by 8 by 15 three-dimensional array of integers.

3. What is the output from the following program segment?

```
int i, c1 = 0, c2 = 0 ;
int a[] = { 6, 7,3, 13, 11, 5, 1, 15, 9, 4 } ;
for ( i = 0; i < 10; i++ )
{
  if( i%2 == 0 )
    c1++ ;
  if ( a[i]%2 == 0 )
    c2++ ;
}
printf( "c1=%d c2=%d\n", c1, c2 ) ;
```

4. Write a program to read in fifteen numbers and display them as follows:

   (a) each number on a separate line
   (b) on one line, each number separated by a single space
   (c) as in (b) but in the reverse order to which they were input.

5. Write a program to input numbers to two one-dimensional arrays, each having five elements, and display the result of multiplying corresponding elements together.

6. The number of users logging into a network every hour is input from the keyboard into a 24-element integer array. Write a program to display a report of the form:

```
    Time              Number of logins    Percentage of total
 0:00 - 1:00                 1                    0.3
 1:00 - 2:00                 2                    0.7
...etc
 9:00 - 10:00               25                    8.3
10:00 - 11:00               27                    9.0
11:00 - 12:00               28                    9.3
...etc
23:00 - 0:00                 8                    2.7

Maximum logins 28 occurred between 11:00 and 12:00
Minimum logins  1 occurred between  0:00 and  1:00
```