McMaster University

Principles of Programming Assignments

Exercise Sheet- Week3

1. (Find the Two Largest Numbers) find the two largest values of the 10 numbers. [Note: You may input each number only once.]

SOLUTION

```
#include <stdio.h>

int main()
{
   int i;
   int counter, number;
   int largest = 0, secondLargest = 0;

   for(i=0; i<10; i++)
   {
      printf("Input number: ");
      scanf("%d", &number);
      if(number > largest) {
         secondLargest = largest;
         largest = number;
      }
      else if(number > secondLargest)
         secondLargest = number;
   }

   printf("The two largest numbers entered were %d and %d\n", secondLargest, largest);

   return 0;
}
```

2. State which values of the control variable x each of the following for statements prints:

A.
```
for( x = 2; x <= 13; x += 2) {
      printf("%u\n", x );
}
```

B.
```
for( x = 5; x <= 22; x += 7) {
      printf( "%u\n", x );
}
```

C. for(x = 3; x <= 15; x += 3) {
printf("%u\n", x);
}

SOLUTION

a.

2

4

6

8

10

12

b.

5

12

19

c.

3

6

9

12

15

3. (Calculating the Sum of Even Integers) write a program that calculates and prints the sum of the even integers from 2 to 30.

SOLUTION

```
#include <stdio.h>

int main()
{
   int somma = 0;
   int i;

   for (i = 2; i <= 30; i += 2) {
         somma += i;
         printf("somma fino %d: %d\n", i, somma);
   }

}
```

4. Assume i = 1, j = 2, k = 3and m = 2. What does each of the following statements print?
   1. printf("%d", i == 1);
   2. printf("%d", j == 3);
   3. printf("%d", i >= 1&& j < 4);
   4. printf("%d", m < = 99&& k < m);
   5. printf("%d", j >= i || k == m);
   6. printf("%d", k + m < j || 3- j >= k);
   7. printf("%d", !m);
   8. printf("%d", !(j - m));
   9. printf("%d", !(k > m));
   10. printf("%d", !(j > k));

SOLUTION

1
0
1
0
1
0
0
1
0
1