

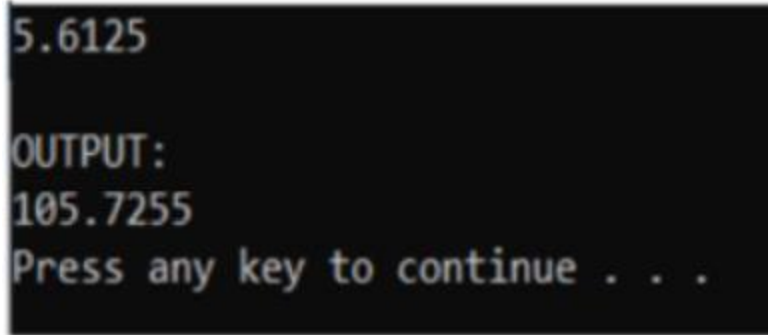
PRF192 PE 04.01.20

Question 1:

(1 mark, file to be edited: Q1.cpp)

Users are required to enter a double number x using the keyboard (STDIN).
Please print out the result of $3x^2 + 2x$ with 4 numbers after decimal point.
Below is an example of how the program will run:

Enter the values 5.6125 for 'x'



```
5.6125
OUTPUT:
105.7255
Press any key to continue . . .
```

Question 2:

(1 mark, file to be edited: 02.cpp)

Users are required to enter two integer numbers 'a' and 'b' ($a < b$) using the keyboard (STDIN).
The system displays the product: $a*b*(a-b)$.
Below is an example of how the program will run:

Enter the values 2, 4 for 'a', 'b'



```
2
4
OUTPUT:
-16
Press any key to continue . . .
```

Question 3:

[1 mark, file to be edited: Q1.pp)

Your program allows users to enter 5 integer numbers.

The system sorts the entered numbers in ascending order then display to screen the squared of these sorted numbers. There is a space character between any two adjacent numbers.

Below is an example of how the program will run

```
1
4
6
7
3

OUTPUT:
1 9 16 36 49
Press any key to continue . . .
```

Question 4:

(1 mark, file to be edited: Q4.cpp)

Your program allows users to enter an integer number 'n' <20.

The program prints out an inverted same number row triangle of height 'n'.

Below is an example of how the program will run:

```
5

OUTPUT:
5 5 5 5 5
4 4 4 4
3 3 3
2 2
1
Press any key to continue . . .
```

Question 5:**(1 mark, file to be edited: Q5.cpp)**

Your program allows users to enter array of n integers, where n is entered by the user ($n < 10$).

- If the array is asymmetric and not all numbers in the array are even, then display sum of all even numbers.
- Otherwise display 0

Below are some examples:

<p>$n = 4$ array = {2,4,4,2} - symmetric array, all numbers are even.</p>	<p>$n = 5$ array = {2,1,3,4,2} - asymmetric array, not all numbers are even.</p>
<pre>4 2 4 4 2 OUTPUT: 0 Press any key to continue . . .</pre>	<pre>5 2 1 3 4 2 OUTPUT: 8 Press any key to continue . . .</pre>

Question 6:**(1 mark, file to be edited: Q6.cpp)**

Your program allows users to enter a string 's' with maximum length of 50 characters. The system prints out just only these characters (exclude digits) and their frequencies appearing in the string following the chronological order (appeared first in string s).

There is an underscore '_' character between a character and its frequency.

There is a space character between any adjacent group of character_frequency

Below is an example:

<p>$s=a3acb7bd3e$</p> <p>Here, frequencies of 'a', 'c', 'b', 'd', 'e' are 2, 1, 2, 1, 1 respectively.</p> <pre>a3acb7bd3e OUTPUT: a_2 c_1 b_2 d_1 e_1 Press any key to continue . . .</pre>

Question 7:**(1 mark, file to be edited: Q7.cpp)**

Your program should allow users to find the three-digit number that appears the most in the array of 7 integers.

When the odd number appears the most in the array, your program prints out that number. There is a space character between any two adjacent numbers.

When there is no three-digit number existing in the array, your program prints to output:

No three-digit number

Below is the example show how the program works:

There is / are most appearing three-digit numbers	There is no three-digit number
<pre>1 2 3 666 77 88 2 OUTPUT: 666 Press any key to continue . . .</pre>	<pre>1 22 3 4 33 22 3333 OUTPUT: No three-digit number Press any key to continue . . .</pre>
<pre>123 123 832 22 832 111 7 OUTPUT: 123 832 Press any key to continue . . .</pre>	

Question 8:**(1 mark, file to be edited: Q8.cpp)**

Your program should allow users to enter an integer number 'n', then it should display each digit in the number (following the order of the digits in the given number). After each digit, there is a comma ',' character. The last digit does not have the comma ',' character.

Example:

```
3147

OUTPUT:
3,1,4,7
Press any key to continue . . .
```

Question 9:

(1 mark, file to be edited: Q9.cpp)

Your program should allow users to enter a float number (with a decimal point), then it should display the product of the digits on the left and the right of the decimal point.

Example:

```
125.3773  
  
OUTPUT:  
15  
Press any key to continue . . .
```

Question 10:

(1 mark, file to be edited: Q10.cpp)

Your program should allow users to enter two integer numbers: $a < 255$, $b < 255$, then it should display the binary representations of these numbers. There is a space character between the two binary numbers.

Example:

```
110  
122  
  
OUTPUT:  
01101110 01111010  
Press any key to continue . . .
```