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## ***Lab. (3)***

### ***Variables and Data Types***

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*Answer the following questions*

*Question One:*

Write a program that produces the following output:

By initialize and constant variable a

```
| a | sqr |cube|
*****
| 0 | 0 | 0 |
*****
| 1 | 1 | 1 |
*****
| 2 | 4 | 8 |
```

*Question Two:*

Consider the following C++ program in which the statements are in the incorrect order. Rearrange the statements so that it prompts the user to input the length and width of a rectangle and output the area and perimeter of the rectangle.

```
#include <iostream>
{
int main ()
cout<< "Enter the length:";
cin>>length;
cout<< endl;
int length;
area=length*width;
int width;
cin>>width;
```

```
cout<< "Enter the width:"
cout<< endl;
cout<<"Area="<<area<< endl;
cout<<"Perimeter="<<perimeter<< endl;
int area;
int perimeter;
}
```

**Question Three:**

Write a C++ statement that outputs the values of name and study Hours with the appropriate text. For example, if the value of name is "Donald "and the value of study Hours is 4.5, the output is:

**Hello, Donald! On Saturday, you need to study 4.5 hours for the exam.**

**Question Four:**

Write a program that prompts the user to input a decimal number and outputs the number rounded to the nearest integer.

**Question Five:**

Write a C++ program to compute the perimeter and area of a circle with an input radius from user.

**Question Six:**

Write a C++ program to calculate the distance between the following two points:

$x_1 = 25$  ,  $y_1 = 15$  ,  $x_2 = 35$  ,  $y_2 = 10$ . Using  $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$