

# 1542495\_plagi

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### Question 1

a. 

```
1 Radius = float(input("Enter the radius of circle: "))
2 pi = 3.14
3 Area = pi * (Radius ** 2)
4 print("The Area of the circle is ", Area)
```

“Figure: "code" for finding the area of the circle”

“(Source: Self-created using VS "code")”

The above "code" is written for the execution of finding the area of the circle. The radius has been taken as input and the value of “pi” has been taken as 3.14 and the formula for the area has been provided for the "code".

```
Enter the radius of circle: 4
The Area of the circle is 50.24
```

“Figure: Output the area of the circle”

“(Source: Self-created using VS "code")”

The output has been provided for the area of the circle. A radius of 4 has been given as input and the area has been computed to 50.24

b. 

```
1 Base = float(input("Enter the base of triangle: "))
2 Height = float(input("Enter the height of triangle: "))
3
4 # Calculating the area of the triangle
5 Area = 0.5 * Base * Height
6
7 # Printing the area of the triangle
8 print("The area of triangle is ", Area)
```

“Figure: "code" for finding the area of the triangle”

“(Source: Self-created using VS "code")”

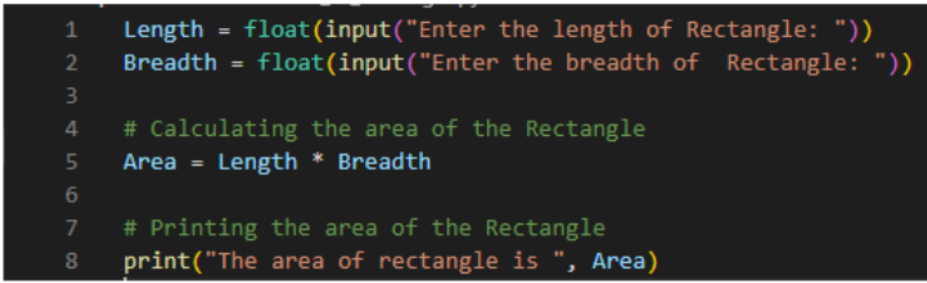
The above "code" is written for the execution of finding the area of the triangle. The base and the height have been taken as input and the formula for the area has been provided for the "code".

```
Enter the base of triangle: 10
Enter the height of triangle: 20
The area of triangle is 100.0
```

**“Figure: Output for finding the area of the triangle”**

“(Source: Self-created using VS "code")”

The output has been provided for the area of the triangle. The base of the triangle is given as input as 10 and the height of the triangle is given as input as 20. The area of the triangle is computed to 100.

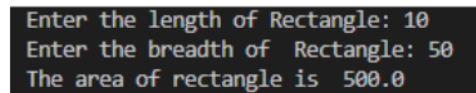
c. The image shows a code editor with the following Python code:

```
1 Length = float(input("Enter the length of Rectangle: "))
2 Breadth = float(input("Enter the breadth of Rectangle: "))
3
4 # Calculating the area of the Rectangle
5 Area = Length * Breadth
6
7 # Printing the area of the Rectangle
8 print("The area of rectangle is ", Area)
```

**“Figure: "code" for finding the area of the rectangle”**

“(Source: Self-created using VS "code")”

The above "code" is written for the execution of finding the area of the rectangle. The length and the breadth have been taken as input and the formula for the area has been provided for the "code".

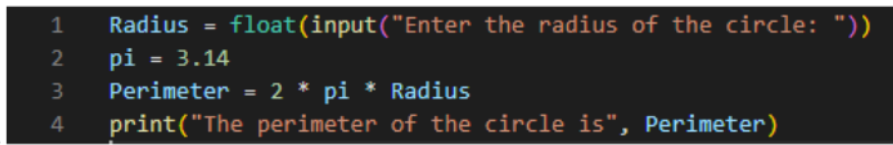
The image shows the output of the code in a terminal window:

```
Enter the length of Rectangle: 10
Enter the breadth of Rectangle: 50
The area of rectangle is 500.0
```

**“Figure: Output for finding the area of the rectangle”**

“(Source: Self-created using VS "code")”

The output has been provided for the area of the rectangle. The length of the rectangle is given as input as 10 and the breadth of the rectangle is given as input as 50. The area of the rectangle is computed to 500.

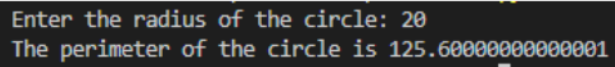
d. The image shows a code editor with the following Python code:

```
1 Radius = float(input("Enter the radius of the circle: "))
2 pi = 3.14
3 Perimeter = 2 * pi * Radius
4 print("The perimeter of the circle is", Perimeter)
```

**“Figure: "code" for finding the perimeter of the circle”**

“(Source: Self-created using VS "code")”

The above "code" is written for the execution of finding the perimeter of the circle. The radius has been chosen as input and the value of pi is chosen as 3.14. The formula for the perimeter of the circle is provided.



```
Enter the radius of the circle: 20
The perimeter of the circle is 125.60000000000001
```

**“Figure: Output for finding the perimeter of the circle”**

“(Source: Self-created using VS "code")”

The output has been provided for the perimeter of the circle. The radius of the circle is taken as input as 20. The perimeter of the circle is computed to 125.6

## Question 2

```
1  import random
2
3  # Function to generate a lottery ticket
4  def generate_ticket():
5      Ticket = []
6      for i in range(6):
7          Ticket.append(random.randint(1, 59))
8      return Ticket
9
10 # Generating 5 lottery tickets
11 Tickets = []
12 for i in range(5):
13     Tickets.append(generate_ticket())
14
15 # Print the generated tickets
16 print("Generated Tickets:")
17 for Ticket in Tickets:
18     print(Ticket)
19
20 # Select a winner
21 Winner = random.choice(Tickets)
22
23 # Print the winner ticket
24 print("Winner Ticket:")
25 print(Winner)
```

**“Figure: Function to generate lottery ticket”**

“(Source: Self-created using VS "code")”

The above "code" is written for generating lottery tickets for 6 numbers between 1 to 59. At first, a random list has been generated between the numbers 1 to 59. The generated list of tickets has been appended with another list. The other list will contain a random list of winning tickets that will be taken from the list of generated tickets. The append function has been used to do the entire function.

```
Generated Tickets:  
[15, 25, 28, 21, 3, 41]  
[10, 18, 30, 28, 56, 17]  
[25, 1, 26, 18, 38, 57]  
[5, 59, 33, 11, 43, 46]  
[32, 5, 42, 38, 57, 38]  
Winner Ticket:  
[10, 18, 30, 28, 56, 17]
```

**“Figure: Output for the generation of lottery ticket”**

“(Source: Self-created using VS "code")”

The output shows the list of five generated tickets. Among them, a list has been chosen in random for the winning ticket. The output has been generated in the “Visual "code" Studio”.

### Question 3

```
1  import random
2
3  # create an empty list
4  My_List = []
5
6  # populate the list with 20 random numbers between 1 and 59
7  for i in range(20):
8      |   My_List.append(random.randint(1, 59))
9
10 # print the original list
11 print("Original List:", My_List)
12
13 # find the largest element in the list
14 max_value = max(My_List)
15
16 # replace the largest element in the list with zero
17 max_index = My_List.index(max_value)
18 My_List[max_index] = 0
19
20 # print the updated list
21 print("Updated List:", My_List)
22
23 # calculate the average of the updated list
24 average = sum(My_List) / len(My_List)
25
26 # print the average
27 print("Average:", average)
```

a.

**“Figure: Creating Array list”**

“(Source: Self-created using VS "code")”

The "code" has been written for creating an empty list and for updating the list while replacing the largest element with zero. The average of all the elements in the updated list has been taken out.

The "code" has been written in “Visual Studio "code”” and is written in “Python Programming Language”.

```
Original List: [33, 28, 17, 34, 14, 21, 38, 52, 28, 16, 59, 16, 29, 54, 2, 48, 43, 53, 8, 54]
Updated List: [33, 28, 17, 34, 14, 21, 38, 52, 28, 16, 0, 16, 29, 54, 2, 48, 43, 53, 8, 54]
Average: 29.4
```

**“Figure: Output of the array list”**

“(Source: Self-created using VS "code")”

2 The above figure shows the output of the "code" that has been written in the “Visual Studio "code"”. The output shows the original list that has been generated and also the updated list with the largest value being replaced with zero. In this case, 59 was the largest element which has been replaced by zero in the updated list. The average of the updated list has been computed to 29.4

```
1  # Defining matrices A and B
2  A = [[1, 2], [3, 4]]
3  B = [[4, 5], [6, 7]]
4
5  # 1. Displaying the elements of matrices A and B
6  print("Matrix A")
7  for row in A:
8      print(row)
9
10 print("Matrix B")
11 for row in B:
12     print(row)
13
14 #Addition
15 C = [[0, 0], [0, 0]]
16 for i in range(len(A)):
17     for j in range(len(B[0])):
18         C[i][j] = A[i][j] + B[i][j]
19
20 # 3. Subtracting
21 D = [[0, 0], [0, 0]]
22 for i in range(len(A)):
23     for j in range(len(B[0])):
24         D[i][j] = A[i][j] - B[i][j]
25
26 # 4. Displaying the output
27 print("A + B = ")
28 for row in C:
29     print(row)
30
31 print("A - B = ")
32 for row in D:
33     print(row)
```

b.

**“Figure: "code" for Matrix Functions”**

“(Source: Self-created using VS "code")”



The "code" overhead has been written for generating the given matrices and applying different mathematical functions to them. The "code" has been written in the "Visual Studio "code"" platform in "Python Programming Language".

```
Matrix A
[1, 2]
[3, 4]
Matrix B
[4, 5]
[6, 7]
A + B =
[5, 7]
[9, 11]
A - B =
[-3, -3]
[-3, -3]
```

**"Figure: Output for Matrix Functions"**

"(Source: Self-created using VS "code")"

Matrix A and Matrix B have been printed as output. At first, an addition has been done between the two matrices and the output matrix has been printed. Secondly, a subtraction has been done between the two given matrices and the output matrix has been printed.

#### Question 4

```
1  num = int(input("Enter a number: "))
2
3  # converting to octal and hexadecimal
4  octal = oct(num)
5  hexadecimal = hex(num)
6
7  # printing the results
8  print("The octal equivalent of", num, "is", octal)
9  print("The hexadecimal equivalent of", num, "is", hexadecimal)
```

**“Figure: "code" for conversion to Octal and Hexadecimal”**

“(Source: Self-created using VS "code")”

The "code" has been written for the conversion of a number to octal and hexadecimal. A number has been taken as input which can be in either binary or decimal or any other form of the number except octal and hexadecimal. The "code" has been written in the “Visual Studio code” platform in “Python Programming Language”.

```
Enter a number: 59
The octal equivalent of 59 is 0o73
The hexadecimal equivalent of 59 is 0x3b
```

**“Figure: Output for conversion to Octal and Hexadecimal”**

“(Source: Self-created using VS "code")”

The output of the above "code" has been provided. In the output, the input has been taken as 59. The equivalent octal conversion of the input is computed as 73 and the equivalent hexadecimal conversion of the input is computed as 3B which is the actual output of the number that has been taken as **input**.

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