

DATE... 4 Nov 23

EXP. No. 11

Activity 11:- Write a Python Program that accepts the length of three sides of a triangle as inputs. The Program should indicate whether or not the triangle is a right angled triangle (Use Pythagorean theorem). Also find out its area using Heron's formula.

```
def is_right_triangle(a, b, c):
```

```
# Check if it's a right angled triangle using Pythagorean theorem.
```

```
sides = [a, b, c]
```

```
sides.sort()
```

```
if sides[0]**2 + sides[1]**2 == sides[2]**2:
```

```
    print("It's a right-angled triangle.")
```

```
else:
```

```
    print("It's not a right-angled triangle.")
```

```
def calculate_area(a, b, c):
```

```
# Calculate the area using Heron's formula
```

```
s = (a + b + c) / 2
```

```
area = (s * (s - a) * (s - b) * (s - c))**0.5
```

```
print("Area of the triangle: ", area)
```

```
# Get input from the user
```

```
side_a = float(input("Enter the length of side a: "))
```

```
side_b = float(input("Enter the length of side b: "))
```

```
side_c = float(input("Enter the length of side c: "))
```

```
# Calculate and Print the area
```

```
calculate_area(side_a, side_b, side_c)
```

```
Enter the length of side a: 5
Enter the length of side b: 12
Enter the length of side b: 13
It's a right angled triangle
Area of the triangle: 30.0
```

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