Module 2: Submit | Lab | Compute Areas of Geometric Shapes

Due: Thu Sep 4, 2025 11:59pm

10 Points Possible

Attempt 1

In Progress
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Unlimited Attempts Allowed

Details

Submit | Compute Areas of Geometric Shapes

Objective

Write a Python script that calculates the area of common geometric shapes using user-provided input and proper formulas.

Instruction

- Your script must compute the area of the following shapes:
  - **Circle**: Area = $\pi \times r^2$
  - **Rectangle**: Area = width × height
  - **Triangle**: Area = (base × height) ÷ 2
- For each shape:
  - Prompt the user to enter the relevant dimensions.
  - Call a separate function to compute the area.
  - Print the result using a clear, formatted message (limit float precision as needed).
- 💡 **Optional Challenge:**
  Add support for extra shapes, implement input validation using `try/except`, or include a menu loop and unit testing.

Sample Interaction

```
Enter the radius: 3.5
The area of the circle with radius 3.5 is 38.4845

Enter the width: 10
Enter the height: 4
The area of the rectangle 10 x 4 is 40.0000

Enter the base: 6
Enter the height: 8
The area of the triangle with base 6 and height 8 is 24.0000
```

File Submission

Submit your file as: `compute_areas.py`

Greading Rubrics (10 points)

- **3 points** – Defines **separate functions** to compute the area for circle, rectangle, and triangle
- **3 points** – Applies the **correct formulas** (use `math.pi` for the circle)
- **2 points** – Prompts the user, collects input, calls the appropriate functions, and prints results
- **1 point** – Includes at least one **comment or docstring** explaining the code
- **1 point** – Code runs without syntax errors
- **Bonus (up to 2 points)** – Includes **extra features** such as additional shapes, robust input handling, looped menus, type hints, or unit tests