Formula Calculator

Description: *Recreate these formulas as functions with the required parameters in VScode (NO REPL.IT) Remember order of operations*

Task 1: Formulas

Familiarize yourself with the following mathematical and scientific formulas:

- Quadratic Formula: $\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
- Pythagorean Theorem: $c^2 = \sqrt{a^2 + b^2}$
- Distance Formula: $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
- Triangular Prism w/ Unequal Edges: $V = \frac{1}{4}ha\sqrt{b^2 - \left(\frac{a}{2}\right)^2}$
- Formula of your own choosing 1 (must be a formula you have covered this school year)
- Formula of your own choosing 2 (must be a formula you have covered this school year)

Task 2: User Interaction

Create a Python program that interacts with the user:

- Display a menu allowing the user to choose a formula (Quadratic, Pythagorean, Distance, Triangular Prism, etc).
- Prompt the user for the necessary values based on the chosen formula.
- Program should run until user decides to quit the program

Task 3: Calculation Functions

Write functions to perform calculations for each formula (plus 2 of your own):

- calculate_quadratic(a, b, c): Returns the solutions for x using the quadratic formula.
- calculate_pythagorean(a, b): Returns the length of the hypotenuse c using the Pythagorean theorem.
- calculate_distance(x1, x2, y1, y2): Calculates the distance between two points in a coordinate plane.
- calculate_triangular_prism(h, a, b): Calculates the volume of a triangular prism with unequal edges

Task 4: Error Handling

Implement error handling in your program:

- Ensure that the dimensions provided by the user are valid (e.g., non-negative numbers).
- Handle potential exceptions gracefully and provide informative error messages.

Task 5: Iterative Calculation

Allow the user to continue calculating results for additional formulas or exit the program based on their preference.

Task 6: Summary

After each calculation, display a summary of the calculated result for the user.

Submission:

Submit your Python program file (.py) along with a brief document explaining the formulas used, how they were implemented in the main program, and how error handling is implemented. Make sure to provide comments for clarity.

***Note**: Ensure that your code runs without errors and meets the specified requirements.*