CS 1160 – Introduction To Computer Programming

Lab 2 – Computing the Paintable Area of a Basement Floor

Learning Objectives
- Learn how to prompt the user for input data
- Learn how to use the user's input data for useful calculations

Overview

You are preparing to paint the floor in your basement with a waterproofing coating. The floor itself is rectangular. On the floor is a circular water heater and a rectangular furnace. The area of the floor that is taken up by the water heater and furnace cannot be painted. The tools you own allow you to measure the floor length and width in feet, the furnace length and width in inches, and the water heater's circumference in inches.

You must write a program where the user can input the floor's length and width in feet, the furnace's length and width in inches, the water heater's circumference in inches, and calculate the paintable area of the floor in square feet displayed with 3 decimal places. The paintable area of the floor is the area of the floor that is not covered by the water heater and the furnace.

The Program

This program will require converting inches to feet, calculating the area of circles and rectangles, accepting user input, and properly displaying the results to the user. An example of a valid execution of the program is shown below:

```
Enter floor length (feet): 27.5
Enter floor width (feet) : 22.9
Enter the furnace length (inches): 42
Enter the furnace width (inches): 23
Enter the water heater circumference (inches): 75
Paintable floor area (square feet): 619.933
```

How to Submit

Save your .py Python program with your code and submit it to the drop box in Pilot.

Grading

This lab is worth 3.000 points, distributed as follows:

Task	Points
Successfully accepted all user input values	1.000
Successfully calculated the paintable area	1.000
Successfully displayed the paintable area with 3 decimal places	1.000
Total	3.000