GSET: Programming - Summer 2022

Lab 1: Variables and Assignment

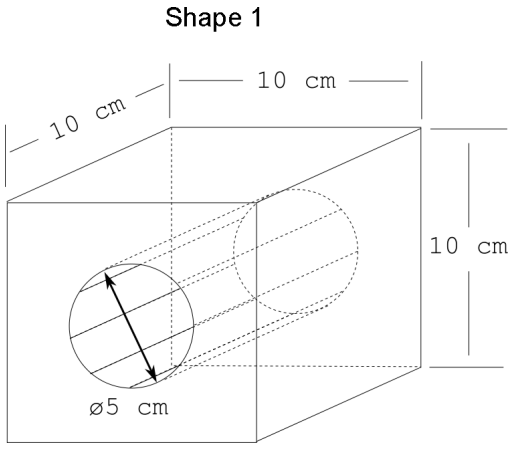
Names:_____

Overview :

You will learn to use variables to store decimal numbers and practice a few basic calculations with the MATLAB command syntax. Turn in this sheet with the answers and a record of the commands you used to solve each problem.

Assignment :

1. ($\frac{40}{100}$ pts.) Assume the **shape 1** and **shape 2** below are made of steel with a density of 8050 $\frac{kg}{m^3}$. Use the command window to calculate the *mass* of **shape 1** shown below.



_____

_____

_____

volume: _____

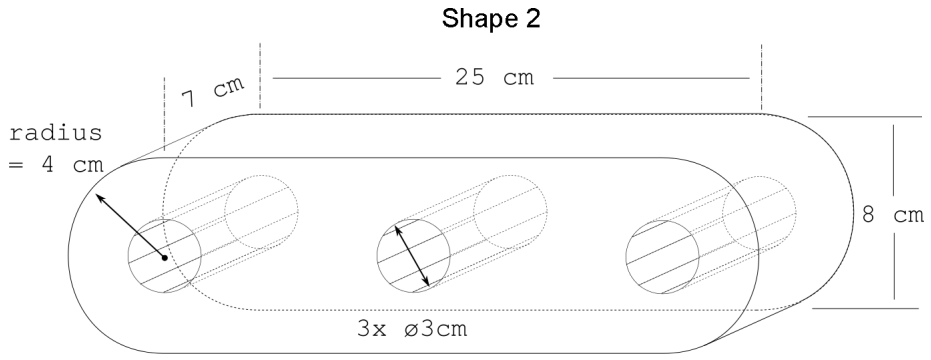
_____

_____

_____

mass: _____

2. ($\frac{40}{100}$ pts.) Use the command window to calculate the *mass* of **shape 2** shown below.



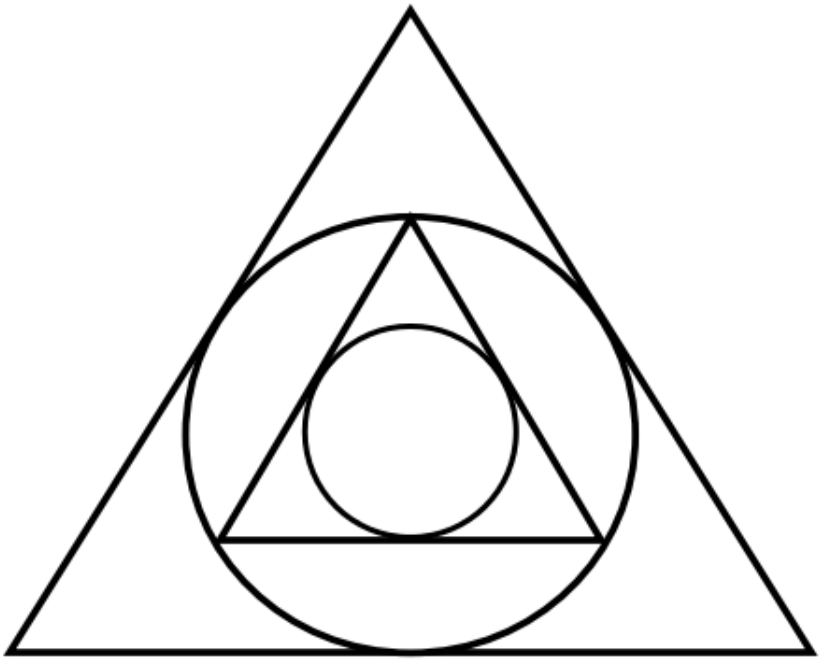
volume: _____

mass: _____

3. ($\frac{20}{100}$ pts.) Imagine you are an engineer designing **shape 1**. Your job is to reduce the mass of **shape 1** to exactly 5 kg. You must do this by increasing the size of the hole. What is the diameter of the hole that would make the mass equal to exactly 5 kg?

diameter: _____

Geometry Puzzle :



What is the ratio of the volume of the small triangle to volume of the large triangle?

What is the ratio of the volume of the small circle to volume of the large circle?

How can you prove it?