Student Name: _____ Student ID: _____ TA: _____

Rust Lab 01

2/7/2025

Follow the instructions provided in each exercise. There'll be hints in some exercises; they will be spelled backward so that you don't accidentally go into the hints.

If your computer doesn't have the Rust compiler installed, you can visit the website https://play.rust-lang.org/ and complete the exercises there.

Lab 01/01 Introduce Yourself

Print out your first and last name on the first line, your birthday on the second line, and your favorite food on the third line.

Requirement

- For your first and last name, you must use two separate `print` and `println` statements for first and last name separately.

Expected Output

My name is John Doe

12th January 2005

Steak

TA Comment: _____

Lab 01/02 Volume Calculator

Calculate the volume of these geometric shapes: sphere, cylinder, and cone.

Code Template:

```
fn main() {
    let sphere_radius = 1.0 /*can be changed*/;
    let cylinder_radius = 1.0 /*can be changed*/;
    let cylinder_height = 1.0 /*can be changed*/;
    let cone_radius = 1.0 /*can be changed*/;
    let cone_height = 1.0 /*can be changed*/;
}
```

Requirement

- The calculation must be based on the variables provided by the code template. Therefore, if the value assigned to the variable changes the output must change as well.

Expected Output

The volume of the sphere is 2.3

The volume of the cylinder is 9.2

The volume of the cone is 2.4

TA Comment: _____

Lab 01/03 Speed Limit

Write a program determining whether the car is driving below, over, or within the speed limit. The minimum speed for the program is 40, and the maximum speed is 120.

Code Template:

```
fn main() {
   let speed = 50 /*can be changed*/
}
```

Requirement

- When driving above the speed limit, the program should output “you are driving above the speed limit by {number} km/hr.”. You must replace the “{number}” with the number of speed it exceeded.

- The same goes for below the speed limit, output “you are driving below the speed limit by {number} km/hr.”

- Otherwise, output “you are driving within the speed limit”

Expected Output (Below the Speed Limit Case): “you are driving below the speed limit by 12 km/hr.”

Expected Output (Within the Speed Limit Case): “you are driving within the speed limit”

Expected Output (Above the Speed Limit Case): “you are driving above the speed limit by 24 km/hr.”

TA Comment: _____

Lab 01/04 Odd/Positive Number

Write a program that determines whether the number is odd or even and whether the number is positive or negative.

Code Template:

```
fn main() {
   let number = 2 /*can be changed*/;
}
```

Expected Output (Number 5 case): “number 5 is a positive odd number”

Expected Output (Number -2 case): “number -2 is a negative even number”

Expected Output (Number 0 case): “number 0 is a positive even number”

TA Comment: _____

Hint

Modulus Operator (%)

The modulus operator % calculates the remainder of the division of one number by another. In the expression number % 2, the number number is divided by 2, and the remainder of this division is the result.