**Assignment 6**

**# Problem 1**

number = 1

while number <= 1000:

if number % 3 == 0:

print(number)

number += 1

**# Problem 2**

while True:

inches = float(input("Enter the number of inches (negative to quit): "))

if inches < 0: # Exit the loop if a negative value is entered

break

centimeters = inches \* 2.54

print(f"{inches} inches is {centimeters} centimeters.")

**# Problem 3**

numbers = []

while True:

user\_input = input("Enter a number (or press enter to quit): ")

if user\_input == "": # Stop when an empty string is entered

break

numbers.append(float(user\_input)) # Convert the input to a float and add it to the list

if numbers:

print(f"The smallest number is {min(numbers)}")

print(f"The largest number is {max(numbers)}")

else:

print("No numbers were entered.")

**# Problem 4**

import random

random\_number = random.randint(1, 10)

while True:

guess = int(input("Guess the number between 1 and 10: "))

if guess < random\_number:

print("Too low")

elif guess > random\_number:

print("Too high")

else:

print("Correct! You guessed the number.")

break

**# Problem 5**

correct\_username = "python"

correct\_password = "rules"

attempts = 0

max\_attempts = 5

while attempts < max\_attempts:

username = input("Enter username: ")

password = input("Enter password: ")

if username == correct\_username and password == correct\_password:

print("Welcome")

break

else:

print("Incorrect username or password")

attempts += 1

if attempts == max\_attempts:

print("Access denied")

**# Problem 6**

import random

def approximate\_pi(total\_points):

inside\_circle = 0

for \_ in range(total\_points):

x = random.uniform(-1, 1)

y = random.uniform(-1, 1)

if x\*\*2 + y\*\*2 < 1:

inside\_circle += 1

pi\_approx = 4 \* (inside\_circle / total\_points)

return pi\_approx

total\_points = int(input("Enter the number of random points to generate: "))

pi\_value = approximate\_pi(total\_points)

print(f"The approximation of pi is: {pi\_value}")