**Assignment 7**

**# Program 1**

import random

def roll\_dice():

return random.randint(1, 6)

def main():

roll = 0

while roll != 6:

roll = roll\_dice()

print(f"Rolled: {roll}")

main()

**# Program 2**

import random

def roll\_dice(sides):

return random.randint(1, sides)

def main():

sides = int(input("Enter the number of sides on the dice: "))

roll = 0

while roll != sides:

roll = roll\_dice(sides)

print(f"Rolled: {roll}")

main()

**# Program 3**

def gallons\_to\_litres(gallons):

return gallons \* 3.78541

def main():

while True:

gallons = float(input("Enter volume in gallons (negative value to quit): "))

if gallons < 0:

break

litres = gallons\_to\_litres(gallons)

print(f"{gallons} gallons is {litres:.2f} litres.")

main()

**# Program 4**

def sum\_of\_list(numbers):

return sum(numbers)

def main():

numbers = [1, 2, 3, 4, 5] # Example list

result = sum\_of\_list(numbers)

print(f"The sum of {numbers} is {result}")

main()

**# Program 5**

def remove\_odd\_numbers(numbers):

return [num for num in numbers if num % 2 == 0]

def main():

numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9] # Example list

filtered\_list = remove\_odd\_numbers(numbers)

print(f"Original list: {numbers}")

print(f"List after removing odd numbers: {filtered\_list}")

main()

**# Program 6**

import math

def pizza\_unit\_price(diameter, price):

radius = diameter / 2

area = math.pi \* radius \*\* 2 / 10000 # Convert from cm² to m²

return price / area

def main():

diameter1 = float(input("Enter the diameter of the first pizza in cm: "))

price1 = float(input("Enter the price of the first pizza in euros: "))

unit\_price1 = pizza\_unit\_price(diameter1, price1)

diameter2 = float(input("Enter the diameter of the second pizza in cm: "))

price2 = float(input("Enter the price of the second pizza in euros: "))

unit\_price2 = pizza\_unit\_price(diameter2, price2)

print(f"Unit price of first pizza: {unit\_price1:.2f} €/m²")

print(f"Unit price of second pizza: {unit\_price2:.2f} €/m²")

if unit\_price1 < unit\_price2:

print("The first pizza offers better value for money.")

elif unit\_price2 < unit\_price1:

print("The second pizza offers better value for money.")

else:

print("Both pizzas offer the same value for money.")

main()