Assignment 2: Simple Application of Statements

Task 1: BMI Calculator

Write a Python program that asks the user for their name, height, and weight, then calculate and print the BMI value with the user's name.

```
name = input("Enter your name: ")
height = input("Enter your height: ")
weight = input("Enter your weight: ")

# BMI Calculation
BMI = . . .

print(f"Hello {name}! Your BMI is {BMI}.")
```

*Task 2: Combination Calculation ($\mathbf{C_r^n = \frac{n!}{(n-r)!r!}}$)

Define C_r^n as number of ways to choose r items from n items without repetition and without order. The task is to assign two inputs: n and r, and use math library (see url attached) to compute the associated combination. url: `https://docs.python.org/3/library/math.html#`

```
# Import library
import math

n = input("n = ")
r = input("r = ")

# The rest is to be implemented
```

Answer

*Task 3: Acid-Base Calculation

2 L of solution of $5 \times 10^{-}3$ M HCL and $3 \times 10^{-}3$ M $AgNO_3$ mixing together. Calculate the followings:

1. pH of the solution
2. Mass of precipitation
3. Mass of pure water (without HCL and $AgNO_3$)

```python
# Import library
import math

HCL_M = 5e-3     # equals to 5 * 10**-3
AgNO3_M = 3e-3   # equals to 3 * 10**-3
V = 2            # 2 L of water

total_H = ...        # total_H is used to find pH of the solution
precipitation = ... # What is this compound?
```

Answer