

# Rajalakshmi Engineering College

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## NeoColab\_REC\_CS23221\_Python Programming

### REC\_Python\_Week 1\_PAH

Attempt : 1  
Total Mark : 6  
Marks Obtained : 6

### Section 1 : Coding

#### 1. Problem Statement

Mandy is debating with her friend Rachel about an interesting mathematical claim. Rachel asserts that for any positive integer  $n$ , the ratio of the sum of  $n$  and its triple to the integer itself is always 4. Mandy, intrigued by this statement, decides to validate it using logical operators and basic arithmetic.

She wants to confirm if the statement holds true for any positive integer  $n$ .

#### ***Input Format***

The input consists of a positive integer  $n$ , representing the integer to be tested.

#### ***Output Format***

The first line of output displays "Sum:" followed by an integer representing the

calculated sum.

The second line displays "Rachel's statement is: " followed by a Boolean value indicating whether Rachel's statement is correct.

Refer to the sample output for the formatting specifications.

### **Sample Test Case**

Input: 12

Output: Sum: 48

Rachel's statement is: True

### **Answer**

```
a=int(input())
b=a*3
c=b+a
d=c/a
print(f"sum:{c}")
if d==4:
    print("rachel's statement is: True")
else:
    print("rachel's statement is: False")
```

**Status :** Correct

**Marks :** 1/1

## **2. Problem Statement**

Ella, an avid TV show enthusiast, is planning a binge-watching marathon for a new series. She has a specific routine: after watching a set number of episodes, she takes a short break.

She is provided with the following information:

Each episode of the series has a fixed duration of 45 minutes. After a certain number of episodes, there is a break of 15 minutes.

Ella wants to know the total time she will need to watch the entire series, including the breaks. Your task is to help Ella by calculating the total

viewing time.

### ***Input Format***

The first line of input consists of an integer E, representing the total number of episodes in the series.

The second line consists of an integer B, representing the number of episodes watched before taking a break.

### ***Output Format***

The output prints an integer representing the total viewing time required to watch the entire series, including the breaks.

Refer to the sample output for formatting specifications.

### ***Sample Test Case***

Input: 5

2

Output: 255 minutes

### ***Answer***

```
e=int(input())
b=int(input())
if 1<=e<=20 and 1<=b <=10:
    et=e*45
    btc=int(e-1)//b
    bt=btc*15
    tt=et+bt
    print(f"{tt} minutes")
```

**Status :** Correct

**Marks :** 1/1

## **3. Problem Statement**

Liam works at a car dealership and is responsible for recording the details of cars that arrive at the showroom. To make his job easier, he wants a program that can take the car's make, model, and price, and display the

information in a formatted summary.

Assist him in the program.

### ***Input Format***

The first line of input contains a string, representing the car make.

The second line contains a string, representing the car model.

The third line contains a float value, representing the car price.

### ***Output Format***

The first line of output prints "Car Make: ", followed by the car make.

The second line prints "Car Model: ", followed by the car model.

The third line prints "Price: ", followed by the car price, formatted to two decimal places.

Refer to the sample output for formatting specifications.

### ***Sample Test Case***

Input: Toyota

Camry

23450.75

Output: Car Make: Toyota

Car Model: Camry

Price: Rs.23450.75

### ***Answer***

```
a=input()
b=input()
c=float(input())
print(f"Car Make:{a}")
print(f"Car Model:{b}")
print(f"Price:Rs.{c:.2f}")
```

**Status : Correct**

**Marks :1/1**

#### 4. Problem Statement

Shawn, a passionate baker, is planning to bake cookies for a large party. His original recipe makes 15 cookies, with the following ingredient quantities: 2.5 cups of flour, 1 cup of sugar, and 0.5 cups of butter.

Write a program to calculate the amounts of flour, sugar, and butter needed for a different number of cookies. Provide the ingredient quantities for a specified number of cookies, maintaining the original proportions of the recipe.

##### ***Input Format***

The input consists of an integer  $n$ , representing the number of cookies.

##### ***Output Format***

The first line prints "Flour: X cups" where X represents the amount of flour required for  $n$  cookies, as a double value rounded to two decimal places.

The second line prints "Sugar: Y cups" where Y represents the amount of Sugar required for  $n$ , as a double value rounded to two decimal places.

The third line prints "Butter: Z cups" where Z represents the amount of flour required for  $n$ , as a double value rounded to two decimal places.

Refer to the sample output for formatting specifications.

##### ***Sample Test Case***

Input: 15

Output: Flour: 2.50 cups

Sugar: 1.00 cups

Butter: 0.50 cups

##### ***Answer***

```
n=int(input())
if 1<=n<=100:
    fl=2.5/15
    su=1/15
```

```
bu=0.5/15
```

```
fl_n=fl*n
```

```
su_n=su*n
```

```
bu_n=bu*n
```

```
print(f"Flour:{fl_n:.2f}cups")
```

```
print(f"Sugar:{su_n:.2f}cups")
```

```
print(f"Butter:{bu_n:.2f}cups")
```

**Status :** Correct

**Marks :** 1/1

## 5. Problem Statement

Oliver is planning a movie night with his friends and wants to download a high-definition movie. He knows the file size of the movie in megabytes (MB) and his internet speed in megabits per second (Mbps). To ensure the movie is ready in time, Oliver needs to calculate the download time.

Your task is to write a program that calculates the download time and displays it in hours, minutes, and seconds.

### Example

Input:

MB = 800

mbps = 40

Output:

Download Time: 0 hours, 2 minutes, and 40 seconds

Explanation:

Convert the file size to bits ( $800 \text{ MB} \times 8 \text{ bits/byte} = 6400 \text{ megabits}$ ) and divide it by the download speed ( $6400 \text{ Mbps} / 40 \text{ Mbps} = 160 \text{ seconds}$ ). Now, convert the download time in seconds to hours, minutes, and seconds: 160 seconds is equal to 2 minutes and 40 seconds. So, the download time is 0 hours, 2 minutes and 40 seconds.

### **Input Format**

The first line of input consists of an integer N, representing the file size in megabytes (MB).

The second line consists of an integer S, representing the network speed in megabits per second(mbps).

### **Output Format**

The output prints "Download Time: X hours, Y minutes, and Z seconds", where X, Y, and Z are integers representing the hours, minutes, and seconds respectively.

Refer to the sample output for formatting specifications.

### **Sample Test Case**

Input: 180

3

Output: Download Time: 0 hours, 8 minutes, and 0 seconds

### **Answer**

```
mb=int(input())
mbps=int(input())
if 1<=mb<=10**4 and 1<=mbps<=40:
    sec=(mb*8)/mbps
    h=int(sec//3600)
    m=int((sec%3600)//60)
    s=int(sec%60)
    print(f"Download Time:{h} hours,{m}minutes,and{s}seconds")
```

**Status :** Correct

**Marks :** 1/1

## **6. Problem Statement**

A smart home system tracks the temperature and humidity of each room. Create a program that takes the room name (string), temperature (float), and humidity (float).

Display the room's climate details.

### ***Input Format***

The first line of input consists of a string, representing the room name.

The second line consists of a float value, representing the temperature.

The third line consists of a float value, representing the humidity.

### ***Output Format***

The first line of output prints "Room: " followed by the room name (string).

The second line prints "Temperature: " followed by the temperature (float) formatted to two decimal places.

The third line prints "Humidity: " followed by the humidity (float) formatted to two decimal places and a percentage sign (%).

Refer to the sample output for formatting specifications.

### ***Sample Test Case***

Input: Living Room

23.45

45.78

Output: Room: Living Room

Temperature: 23.45

Humidity: 45.78%

### ***Answer***

```
a=input()
b=float(input())
c=float(input())
print("Room:",a)
print(f"Temperature:{b:.2f}")
print(f"Humidity:{c:.2f}%")
```

**Status :** Correct

**Marks :** 1/1