1. Body Mass Index (BMI) is a measure of health based on height and weight. It can be calculated by taking your weight in kilograms and dividing it by the square of your height in meters. The interpretation of BMI for people 20 years or older is as follows:

**BMI Interpretation**

BMI < 18.5 Underweight

18.5 ≤ BMI < 25.0 Normal

25.0 ≤ BMI < 30.0 Overweight

30.0 ≤ BMI Obese

**Expected output:**

Enter weight in pounds: 146

Enter height in inches: 70

BMI is 20.948603801493316

Normal

1. Suppose you want to develop a program to play lottery. The program randomly generates a lottery of a two-digit number, prompts the user to enter a two-digit number, and determines whether the user wins according to the following rules:

1. If the user input matches the lottery number in the exact order, the award is $10,000.

2. If all digits in the user input match all digits in the lottery number, the award is $3,000.

3. If one digit in the user input matches a digit in the lottery number, the award is $1,000.

Note that the digits of a two-digit number may be **0**. If a number is less than **10**, we assume the number is preceded by a **0** to form a two-digit number. For example, number **8** is treated as **08** and number **0** is treated as **00** in the program.

Expected output:

Enter your lottery pick (two digits): 15

The lottery number is 15

Exact match: you win $10,000

3. Rewrite the following conditional expressions using **if-else** statements.

a. score = (x > **10**) ? **3** \* scale : **4** \* scale;

b. tax = (income > **10000**) ? income \* **0.2** : income \* **0.17** + **1000**;

c. System.out.println((number % **3** == **0**) ? i : j);

1. Write a program that prompts the user to enter an integer for today’s day of the week (Sunday is 0, Monday is 1, …, and Saturday is 6). Also prompt the user to enter the number of days after today for a future day and display the future day of the week.

Expected Output:

Enter today's day: 1

Enter the number of days elapsed since today: 3

Today is Monday and the future day is Thursday