

C4M Homework: Week 1 Variables, Conditionals, Simple Loops

Please submit your solutions to these problems on MarkUs at <https://markus.cdf.toronto.edu/c4m-2016> using your UTORID to authenticate.

1. A person's body mass index (in kg/m^2) is calculated by dividing their weight in kilograms by the square of their height in meters. But most people in Canada know their weight in pounds rather than kilograms and their height in feet and inches. Write a simple program that asks for the patient's weight in pounds, height in feet and inches and then uses these three numbers to calculate a body mass index. (in kg/m^2 .) Name your program `bmi.py`.
2. The dosage for amoxycillin for a child depends on the child's weight expressed in kilograms. It is 80 mg per kg per day to a maximum of 500 mg per day. The total amount is typically divided into three equal doses. Write a program named `dosage.py` that asks for a child's weight (in kilograms) and prints the total amount per day and the amount of each of the three individual doses.
3. There are a number of different formulae for calculating ideal body weight. The Miller formula is as follows:

Ideal Body Weight (men) = 56.2 kg + 1.4 kg for every inch over 5 feet
Ideal Body Weight (women) = 53.1kg + 1.36kg for every inch over 5 feet

Write a program that asks if your patient is male or female and their height in inches. Then print the ideal body weight according to Miller.

This formula is considered a poor estimate for tall men, so for men over 6 feet tall, print the Miller ideal body weight, but also print a warning message pointing out that the calculated value is probably inaccurate and suggesting that the user consider other definitions of ideal weight.

Name your file `ideal.weight.py`.

4. Consider a list of strings that are represent handedness of subjects in a study and looks something like this:

```
hands = ["left", "right", "right", "right", "left", "mixed", "right", ...]
```

The only elements in the list are the strings "right", "left" or "mixed". Write a program that will work on any such list and print the percentage of subjects from each category of handedness. For example, if you were to run it on the list ["right", "left", "right", "right"], it should print the output:

```
Right-handed: 75 %  
Left-handed: 25 %  
Mixed-handed: 0 %
```

Don't worry about formatting the numbers. You might see 75.00000 as your result and that's fine for now. Name your program `handed.py`.

5. Suppose we have a list of measurements. All the measurements are larger than 0 and the list has at least one measurement. Write a program named `maximum.py` to print the largest measurement from the list. Test your program on the test cases shown in this table.

list	expected output
[1.1, 4, 0.5, 3]	4
[1, 3]	3
[4]	4