CS101
Lab Session 2
January 19-20

Note: Monday, January 19 is a holiday. If you are in the Tuesday lab section, you should attend as you normally would. If you are in the Monday section, you may, if you choose, attend the Tuesday section. Otherwise, you should work the lab exercise on your own.

1. The Body Mass Index (BMI) is a single number that is supposed to tell you how fat you are. (Or, at any rate, that’s how I think of it.) The following formula is used to compute the BMI, given the person’s weight in pounds and height in inches.

\[
BMI = 703 \times \frac{\text{weight}}{\text{height} \times \text{height}}
\]

I have provided on the course web site a Python program that will print the BMI as output given the height and weight. This short program has a number of bugs, as well as a style error that makes it extremely unfriendly to the user. Your job is to revise the program and produce a correct and easy-to-use version of this program.

Incidentally, the most suitable way to display the BMI is rounded off to one digit after the decimal point, for instance, 16.1.

2. We know that if u and v are expressions with type int, then the value of u\%v is the remainder of the value of u upon division by v. We know exactly what this means if u and v are both positive integers: In that case u\%v is the unique integer 0<=r < v such that
\[
v = qu+r
\]
for some integer q. (Here q is the integer quotient \(u/v\).)

In fact, Python gives a meaning to u\%v if u or v is negative, and even if u and v are floats. Experiment with a few different values of u and v with differing signs and types, and then provide a precise description of what u\%v is that is valid in all cases. You can, of course, look at the documentation for this, but is instructive to first carry out the experiment and try to figure out what it is doing.