Homework

02

A Lethal Dose

Here is the second problem for this chapter:

> *A government research lab has concluded that an artificial sweetener commonly used in diet soda will cause death in laboratory mice. A friend of yours is desperate to lose weight but cannot give up soda. Your friend wants to know how much diet soda it is possible to drink without dying as a result. Write a program to supply the answer.*

The inputs to the program are the amount of artificial sweetener needed to kill a mouse, the weight of the mouse, and the weight of the dieter. To ensure the safety of your friend, be sure the program requests the weight at which the dieter will stop dieting, rather than the dieter's current weight.

Assume that:

- ✓ diet soda contains one- tenth of 1% artificial sweetener
- ✓ the weight of a can of soda is 350 grams
- ✓ one pound is 454 grams.

Use **named constants** to represent these "given" values, not magic numbers.

Here is what the program looks like when it runs:

```
Weight of the mouse in grams: 15
Lethal dose for the mouse (in grams): 100
Desired weight of the dieter (in pounds): 100
Lethal dose in grams, cans is [302667, 864762]
```

Follow the same process you followed for H01. Check your work with **`make itest`** and submit it with **`make submit`**. Check on Piazza or at my office hours if you are having problems. Make sure you start early enough.