Gasoline Calculations

Download the program skeleton in the file `gas.py` from the “Artifacts” section of the CTL website to the same folder that you created in the first exercise.

Use the following **incremental** process to develop a program that satisfies the specification below.
1. Run the program skeleton to check that the symbolic constants are properly initialized.
2. Below the first comment, add code to implement it. Test the code you just added by rerunning the program. (Use the symbolic constants created by executing lines 18 and 19 in place of string literals.)
3. Continue in fashion, adding code to implement the next comment and testing the code before continuing to implement the next comment. Use the symbolic constants instead of literals where appropriate.

Program specification: The program will prompt the user for the number of gallons of gasoline to fill their car’s gas tank (a float) and the number of miles traveled since the last fill up (a float). The program will reprint the input information along with the following information:

- Number of pounds of CO$_2$ emitted since the last fill up
- The average miles per gallon since the last fill up
- The average pounds of CO$_2$ emitted per mile since the last fill up
- The cost in US dollars to fill the gas tank

It will use the following approximate conversion values:

- 1 gallon of gasoline produces 20 pounds of CO$_2$ gas when burned.
- 1 gallon of gasoline costs 2.29 USD.

It will display all values two 2 decimal digits of precision. See the next page for an example interaction with our program.

Q: Why do you think the coding standard stipulates: “Symbolic constants will be used instead of embedding arbitrary numeric and character constants in the source code. Use “upper with under” style for all symbolic constants.”

Q: Where do you think is the best place to round the numeric values to get 2 decimal digits of precision?

Q: What advantages do you get by creating the program incrementally?
Sample run of our program (the 10 and 450 were entered by the user):

```
PLTL/Exercises/Beginnings/gasSolution.py',
wdir='~/Users/lauradillon/Dropbox/291-
PLTL/Exercises/Beginnings')

How many gallons of gas were pumped to fill the tank? 10
How many miles did you drive since the last fillup? 450
Your car traveled 450.0 miles on 10.0 gallons of gas. It emitted 200.0 pounds of CO2.
It got 45.0 miles per gallon.
It emitted 0.44 pounds of CO2 per mile.
Your cost to fill the tank will be 22.9 USD.
```

Original contents of gas.py

```
# -*- coding: utf-8 -*-

Gasoline Calculations

Prompts for:
- The number of gallons of gas to fill your car’s gas tank (a float)
- The number of miles traveled since the last fill up (a float)

Reprint the input information along with the following:
- Number of pounds of CO2 emitted since the last fill up
- The average miles per gallon since the last fill up
- The average pounds of CO2 emitted per mile since the last fill up
- The cost in USD to fill the gas tank

LBS_PER_GAL = 20
USD_PER_GAL = 2.29
GAS_PRPT = "How many gallons of gas were pumped to fill the tank? "
MILES_PRPT = "How many miles did you drive since the last fillup? "

# Prompt for the input values, save them as floats, & print the input info

# Print a blank line followed by the input information

# Calculate and print the pounds of CO2 emitted

# Calculate and print the miles per gallon

# Calculate and print the pounds of CO2 emitted per mile

# Calculate and print the cost
```