
Write Python functions to do the questions below. You should have a single `.py` file that contains all your functions for this assignment and a single driver script that runs all the examples.

Remember to use the `int` and `float` versions of the `input` statement where appropriate and change the filename extensions before emailing the scripts.

- 1) (2 pts) Problem 1 of HW 15.
- 2) (4 pts) Problem 4 of HW 15.
- 3) (4 pts) Write a Python function that will evaluate the function

$$z(x, y) = \begin{cases} x^2 + y^2x & \text{if } x \geq 0, y \geq 0 \\ x^2 - y^2x & \text{if } x \geq 0, y < 0 \\ -x^2 - y^2x & \text{if } x < 0, y \geq 0 \\ -x^2 + y^2x & \text{if } x < 0, y < 0. \end{cases}$$

Test your program for the cases $(-1, -1)$, $(-3, 2)$, $(2, -3)$, $(4, 1)$.