

Exercises for Deck 004

Python Operators

Dr. Hazel “twitch.tv/hazeldotzone” Campbell

1) In the following lines of code, circle the **unary** + and - operators. Do not circle the binary + and - operators.

a) `3 + (2 - 1) + (- 6 - 5)`

b) `5 + 6 > 3 / +6`

c) `44 % 10 == - (4 - 8)`

d) `"-4" * 3 - (5 - + 2 - 9 - - 4)`

e) `25 / 5 - (5)`

2) Does the percent sign compute a percentage? Why or why not?

3) In the following expressions, which operator is evaluated first, second third, and so on? Label them.

a)

`245 + 167 - 321 - 552 + (636 + 760 - 240)`

b)

`369 + 211 % 793 + (+ 902 - 943 // 90)`

c)

`349 / + 679 * 8 % 8 - 210 + 306 == 461`

d)

`401 < 515 - 706 / (4 + 488 * - 446)`

4) Now that you know the order to evaluate the operators in, draw syntax diagrams for the same four expressions.

a) $245 + 167 - 321 - 552 + (636 + 760 - 240)$

b) $369 + 211 \% 793 + (+ 902 - 943 // 90)$

$$c) 349 / + 679 * 8 \% 8 - 210 + 306 == 461$$

$$d) 401 < 515 - 706 / (4 + 488 * - 446)$$

5) Write the **type** each expression evaluates to:

a) $665 < 755$

b) $343 - 618$

c) $9 \% 4.5$

d) $163.5 + 717$

e) $466 / 278$

f) $467 * - 3.6$

g) $- 400$

h) (85.5)

6) Using the multiplication and exponentiation operators, write out the gravitational constant, 6.67×10^{-11} as python code.

a) Now write it out as a single float literal with no operators.

7) Write a program that prompts the user to enter an input number of kilometres, then prints that in miles. Hint: you only need one line of code!

8) Write a program using int literals that demonstrates that multiplication distributes over addition, using the values shown. Hint: you only need one line of code!

$$2 \times (3 + 11) = 2 \times 3 + 2 \times 11$$

