

Exercises 1

Types, Variables, User Input

TO SOLVE THESE YOU CAN **GOOGLE, COLLABORATE AND ASK** THE TEACHERS AS MUCH AS YOU WANT!!!!

1. Which of the following numbers are valid Python integers? **110**, **1.0**, **17.5**, **-39**, **-2.3**
2. What are the results of the following operations. Why?
 - **15 + 20 * 3**
 - **13 // 2 + 3**
 - **31 + 10 // 3**
 - **20 % 7 // 3**
 - **2 ** 3 ** 2**
3. Which of the following are Python floating-point numbers? **1**, **1.0**, **1.12e4**, **-3.141759**, **735**, **0.57721566**, **7.5e-3**
4. What is the difference between **integer** and **floating-point** division? What is the operator used for **integer division**? What is the operator used for **floating-point division**?
5. What are the results of the following **operations**? Why?
 - **1.5 + 2**
 - **1.5 // 2.0**
 - **1.5 / 2.0**
 - **1.5 ** 2**
 - **1 / 2**
 - **-3 // 2**

6. What happens when you evaluate `1e1000`?
7. Given variables `x` and `y`, print out the values of `x` and `y` and their sum. For example, if `x = 5` and `y = 3` your statement should print `5 + 3 = 8`
8. Re-write the following **strings** using **single-quotes** instead of double-quotes. Make use of **escape sequences** as needed:
- `"Hi! I'm Eli."`
 - `"The title of the book was \"Good Omens\"."`
 - `"Hi! I\'m Sebastien."`
9. Use **escape sequences** to write a string which represents the letters `a`, `b` and `c` separated by tabs.
10. What does the following sequence of statements output:
- ```
name = "John Smythe"
print(name.lower())
print(name)
```
11. Convert
- `"8.8"` to a float.
  - `8.8` to an integer (with rounding).
  - `"8.8"` to an integer (with rounding).
  - `8.8` to a string.
  - `8` to a string.
  - `8` to a float.
  - `8` to a boolean.
12. Write a Python **program** which accepts the user's **first** and **last name** and **print** them in **reverse order** with a space between them.

13. Write a **program** to print the following **string** in a specific format (see the output).

**Sample String:** *"Twinkle, twinkle, little star, How I wonder what you are! Up above the world so high, Like a diamond in the sky. Twinkle, twinkle, little star, How I wonder what you are"*

**Output:**

```
Twinkle, twinkle, little star,
 How I wonder what you are!
 Up above the world so high,
 Like a diamond in the sky.
Twinkle, twinkle, little star,
 How I wonder what you are
```

14. Write a **program** that allows a user to enter his or her two **favorite foods**. The program should then print out the name of a new food by joining the original food names **together**.

15. Write a **Tipper program** where the user enters a restaurant bill total. The program should then display two amounts: 15 percent tip and a 20 percent tip.

Last 10 minutes round the table what was hardest/most fun

