Make sure you have the tutorial open when answering the following questions. All of the questions in this module use the Python Tutorial at:

* <http://www.letslearnpython.com/learn/>

Note: You should use the black area of Repl to try the simple Python expressions listed in the questions below.

**Lesson 4: Strings – Strings and Lesson 4: Strings – Examples**

1. What is a string? Explain in words and provide an example.

Character like letters or symbols put together, like words. “apple”.

1. Explain why typing “apple” works and why typing apple without quotes gives an error.

Quotations make the thing that you typed out in the console defined. Whereas, if you add no quotes to what you type, it’ll not be defined and therefore the console cannot print it.

1. Is there a difference between typing “apple” and ‘apple’. (i.e. is there a difference between using single or double quotes.

No, there is none.

1. Explain why typing “apple’ gives an error.

You are using 2 different types of quotations.

1. Explain why “2 + 5” does not equal 7 and how it is different from typing 2 + 5.

Typing “2 + 5” in quotations means you are telling the console to output what you wrote in brackets, not solve the equation. Typing 2 + 5 however, tells the console you want it to solve the problem, not print it.

**Lesson 4: Strings – Operators**

1. Type “appl” + “e” and explain what it does. Why do you think this works?

It makes the “appl” and “e” into one word. The console adds these two strings together and puts them into one word.

1. Type “apple” - “e” and explain what it does. Why do you think this gives an error?

It gives an error message. String variables cannot be changed once defined.

1. Type “Hello” \* 10 and explain what it does. Why do you think this works?

It prints “Hello” side by side 10 times. It multiplies the string by however many times and puts it side by side

1. Type “Hello” / 10 and explain what it does. Why do you think this gives an error?

It gives an error message. You can’t divide a string, which is a word.

1. The ***concatenation*** operator (+) is very useful for working with strings. Explain ***concatenation*** with words and examples.

**Lesson 4: Strings – Indexes and Lesson 4: Strings – Indexes Examples**

1. Create a string using the letters in your first name and write down the ***index*** number for each letter.
2. Explain why print(“Hello!”[4]) does not print “l”.
3. What does print(“Hay, Bob!”[4]) print? For a hint try print(“Hay, Bob!”[3]) and print(“Hay, Bob!”[5])
4. Answer True or False: “String indexes in Python begin at 0”. Do you need to know the reason for this or do you just need to remember this?

**Lesson 5: Variables**

1. Complete “Lesson 5: Variables – Save a Value” by typing the sample commands in the black area of the IDE.
   1. What do you get if you type puppies / 3?
   2. Why doesn’t typing kittens / 3 work?
2. Complete “Lesson 5: Variables – Math Operators” by typing the sample commands in the black area of the IDE.
   1. Explain what happens for following sequence of commands:
      * colour = “red”
      * puppies = 36
      * colour + puppies
3. Complete “Lesson 5: Variables – String Operators” by typing the sample commands in the black area of the IDE.
   1. Explain why the following commands give different results:
      * Color + day \* fishes
      * ( Color + day ) \* fishes
4. Complete “Lesson 5: Variables – Indexes” by typing the sample commands in the black area of the IDE.
   1. What is the index of ‘r’ in “watermelon”?
   2. Write an expression using mynumber to return ‘r’
5. Integers (numbers) and Strings (letters) are different data types in Python?
   1. What doesn’t “friend” + 5 work?
   2. What is the difference between the ***int*** and ***str*** data types?