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.

When you use the word string in programming or coding, you are usually talking about characters, such as letters or symbols, or words.

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

Because it is not proper punctuation and python can’t read it properly

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

Such organization of characters is needed inside single/double quotes. As far as syntax is a concern, there is no difference in single or double quotes..

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

This possibly could not work because the quote “apple” is using the proper punctuation needed but for ‘apple’ it is not using proper punctuation.

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

This is different because python reads “2 + 5” as an expression and it reads 2+5 as an error.

**Lesson 4: Strings – Operators**

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

This works because Python can add things and strings

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

Python does not know how to subtract the strings

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

This works because with that sign it indicates multiplication

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

This does not work and gives it an error because python cannot and does not read division

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

 Concatenation is a little bit like adding - we use it to put strings together side by side.

"Good" + "bye!"

'Goodbye!'

**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.

“T” + “a” + “n” + “v” + “I” + “r “

20 1 14 22 9 18

1. Explain why print(“Hello!”[4]) does not print “l”.

It does not print because the program does not count the first letter.

1. What does print(“Hay, Bob!”[4]) print? For a hint try print(“Hay, Bob!”[3]) and print(“Hay, Bob!”[5])

it prints “”

1. 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?

This is true.

**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?

You cannot use divide

* 1. Why doesn’t typing kittens / 3 work?

It will not work because you are dividing and python does not do division

1. 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”- It reads it as a string
      * puppies = 36 - It reads it as a integer
      * colour + puppies- It will not work because you cannot add a string and a integer together
2. 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

It does not work because it cannot read variables and strings together

1. 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”?- 4
   2. Write an expression using mynumber to return ‘r’- print(“mynumber[7])
2. Integers (numbers) and Strings (letters) are different data types in Python?
   1. What doesn’t “friend” + 5 work?- it does not work because it gives a syntax error
   2. What is the difference between the ***int*** and ***str*** data types?-

“A word that you put in quotes is just a string of letters called a "str" in python. Numbers that don't have a decimal point are integers and are called "int" in python. You can't add a str and an int. But you can turn a number into a string if you use the str() function.”