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.

Characters like letter or symbols put together, like words. For example, “apple”.

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

When you add no quotations to a word or symbol it not defined, and it won’t be able to print it which causes an error.

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

There is no difference in typing “apple” and ‘apple’.

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

typing “apple’ gives us an error because it is using two 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” does not print 7 because this is telling us output what you wrote in quotations, not solve the equation.

**Lesson 4: Strings – Operators**

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

Typing “appl” + “e” makes it into one word. This happens because this tells Python to add 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?

Typing “apple” –“e” gives an error message because string variables cannot be changed when they are already defined.

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

Typing “Hello” \*10 prints hello side by side 10 times. It multiplies the string how many times you want and puts it side by side.

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

Typing “Hello” / 10 gives an error because a string cannot be divided because it is a word.

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

Concatenation is like adding, it’s used to put strings together sie by side. For example, “HI” \*100101001 or “Yo” + “what’s up”.

**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.

“H” + “A” + “R” + “M” + “A” + “N”

0 1 2 3 4 5

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

This can’t print in Python because “I” doesn’t have the index of 4, “o” does. That is why it only prints “o”.

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

This prints a space because the index 4 is the space after the “,”.

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?

True, you just need to remember it.

**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?

If I type this, I get 12.0

* 1. Why doesn’t typing kittens / 3 work?  
     Typing this doesn’t work because kittens is not a defined variable, so it doesn’t have a numerical value.

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”
      * puppies = 36
      * colour + puppies

This gives an error.

1. 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 adds color and day together first, then multiplies it by three since it is in brackets.
2. 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’

fruit[myNumber + 1]

1. 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?

Int is number, str is characters like letters or symbols to put together words.