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.
   1. A string is a kind of data storage that stores text in a variable data type, here is an example: stringExample = (‘Hello World’)
2. Explain why typing “apple” works and why typing apple without quotes gives an error.
   1. Anything within the brackets is classified as the variable, this is the way of the python language, therefore there must be quotation marks enclosing the data.
3. Is there a difference between typing “apple” and ‘apple’. (i.e. is there a difference between using single or double quotes.
   1. No, there is no difference between using double and single quotations in a string type variable, the only difference may be the that if you want an apostrophe in your variable, python will presume it as the end of the variable.
4. Explain why typing “apple’ gives an error.
   1. It gives an error since the variable data does not end with the appropriate quotation it is meant to be ended with, in this case the data type starts with double quotations and ends with single quotations when it should be ending with double quotations as well.
5. Explain why “2 + 5” does not equal 7 and how it is different from typing 2 + 5.
   1. Since there are quotations around the variable, the data type is stored as a string, as text, different from storing it as 7.

**Lesson 4: Strings – Operators**

1. Type “appl” + “e” and explain what it does. Why do you think this works?
   1. It connects both strings because of the plus sign in between, it merges both strings.
2. Type “apple” - “e” and explain what it does. Why do you think this gives an error?
   1. The subtraction operator in between gives you an error since an ‘e’ cannot be subtracted from apple in python.
3. Type “Hello” \* 10 and explain what it does. Why do you think this works?
   1. This command only multiplies the data by ten, or in this case repeats it, ten times.
4. Type “Hello” / 10 and explain what it does. Why do you think this gives an error?
   1. You simply cannot divide string data by 10.
5. The ***concatenation*** operator (+) is very useful for working with strings. Explain ***concatenation*** with words and examples.
   1. The (+) is useful in order to connect two or more strings. Hello = (‘h’+’e’+’l’+’l’+’o’)

**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.
   1. Anser 01234
2. Explain why print(“Hello!”[4]) does not print “l”.
   1. It prints o since the first letter is always 0.
3. What does print(“Hay, Bob!”[4]) print? For a hint try print(“Hay, Bob!”[3]) and print(“Hay, Bob!”[5])
   1. It will print a space.
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?
   1. True, it is necessary to always remember the reason why to anything, to any reason in general.

**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?
      1. You get an error.
   2. Why doesn’t typing kittens / 3 work?
      1. It does not work since you are working with both a integer and a string.
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”
        1. It stores the value of ‘red’.
      * puppies = 36
        1. It stores the value of 36
      * colour + puppies
        1. Not possible since you are adding a string and integer.
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
        1. Both these answers give you different results since python uses the mathematics method of BEDMAS.
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”?
      1. The index of ‘r’ in watermelon is 4.
   2. Write an expression using mynumber to return ‘r’
      1. myNumber = ('watermelon'[4])
      2. print (myNumber)
5. Integers (numbers) and Strings (letters) are different data types in Python?
   1. Why doesn’t “friend” + 5 work?
      1. Since as repeatedly said, a string cannot be combined with an integer.
   2. What is the difference between the ***int*** and ***str*** data types?
      1. The int data type stores integers while the str data type holds characters.