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. (Sting is words, character, letters or symbols put together.)
2. Explain why typing “apple” works and why typing apple without quotes gives an error. (When typing with “” it’s telling python it is a text. When without “” it is a name error because nothing defined.)
3. Is there a difference between typing “apple” and ‘apple’. (i.e. is there a difference between using single or double quotes. (No, there isn’t a difference you will still get the same result.)
4. Explain why typing “apple’ gives an error. (You will get an error because python is sensitive on how you type in your command and it give an error if you don’t properly type it in.)
5. Explain why “2 + 5” does not equal 7 and how it is different from typing 2 + 5. (When put in a sting 2+5 isn’t math, is it is a bunch of character put together and also stings can’t change what is given to them.)

**Lesson 4: Strings – Operators**

1. Type “appl” + “e” and explain what it does. Why do you think this works? (This works because there is nothing being change.)
2. Type “apple” - “e” and explain what it does. Why do you think this gives an error? (It gives you an error because you were trying to remove the letter but sting can’t remove letters.)
3. Type “Hello” \* 10 and explain what it does. Why do you think this works? (This works because you didn’t change the word and kept it the same.)
4. Type “Hello” / 10 and explain what it does. Why do you think this gives an error? (You can’t divide a word.)
5. The ***concatenation*** operator (+) is very useful for working with strings. Explain ***concatenation*** with words and examples. (The concatenation operator doesn’t change the text it combines them together so that means that they were not changed. Example “2” + “5” this doesn’t equal 7 they combine and becomes 25.)

**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.

“J” + “a” + “y” + “s” + ‘o” + “n”

0 1 2 3 4 5

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

(When you input 4 it will output the 4 index letter because 4 in asking for the forth index not the third.)

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

(When printing (“Hay, Bob!”[4]) you will get B because index starts at **0 not 1.)**

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, indexes in Python starts at 0. The origin on way it’s not important 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? (You will get a nameError.)
   2. Why doesn’t typing kittens / 3 work? (You can’t divided a word.)
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” (Nothing)
      * puppies = 36 (Nothing
      * colour + puppies (nameError)
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 (nameError)
      * ( Color + day ) \* fishes (nameError)
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”?

(The ”r” in the index is 4.)

* 1. Write an expression using mynumber to return ‘r’  
     input: (“mynumber”[7])

Output: ’r’

1. Integers (numbers) and Strings (letters) are different data types in Python?
   1. What doesn’t “friend” + 5 work?

(Because 5 is not in quotation.)

* 1. What is the difference between the ***int*** and ***str*** data types?

(Index are the numbers that the string represents. Strings are letters, numbers, symbols and characters.)