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 in Python is a sequence of characters. (Derived data type). Once defined they cannot be changed. Many python methods, such as replace (), join () or split () modify strings. "What's for dinner?"
2. Explain why typing “apple” works and why typing apple without quotes gives an error.
   1. It defines the text, so without quotes, the text isn’t defined.
3. Is there a difference between typing “apple” and ‘apple’. (i.e. is there a difference between using single or double quotes.
   1. There’s no difference between double and single quotes
4. Explain why typing “apple’ gives an error.
   1. You are using two different forms of quotes, so the program can’t identify what quote you’re using.
5. Explain why “2 + 5” does not equal 7 and how it is different from typing 2 + 5.
   1. Typing “2 + 5” in this form tells the program to print out these characters in this sequence, while typing 2+5, literally does the math.

**Lesson 4: Strings – Operators**

1. Type “appl” + “e” and explain what it does. Why do you think this works?
   1. It adds an e to appl. The reason this works is because using + tells the program to add the e to the end of appl.
2. Type “apple” - “e” and explain what it does. Why do you think this gives an error?
   1. It does nothing, the reason it gives an error, is because you can’t remove or changed something from a defined variable that is unchangeable when defined.
3. Type “Hello” \* 10 and explain what it does. Why do you think this works?
   1. It tells the program to type hello 10 times, the reason this works is because you multiple the word hello 10 times
4. Type “Hello” / 10 and explain what it does. Why do you think this gives an error?
   1. The reason this doesn’t work, is because you can’t divide a word.
5. The ***concatenation*** operator (+) is very useful for working with strings. Explain ***concatenation*** with words and examples.
   1. It combines statements. “Hi” + “There”, turns into HiThere, when the string is run.

**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. 0123456
2. Explain why print(“Hello!”[4]) does not print “l”.
   1. The reason it prints 0 is because index numbers for letters start at 0.
3. What does print(“Hay, Bob!”[4]) print? For a hint try print(“Hay, Bob!”[3]) and print(“Hay, Bob!”[5])
   1. The print command print out the space, since the space is given an index number.
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, and all you have to do is just remember this, you don’t been the reason.

**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. A error
   2. Why doesn’t typing kittens / 3 work?
      1. Because kittens is defined, also how do you divide 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”
      * puppies = 36
      * colour + puppies
        1. It gives an error, since you need to assign two variables
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
        1. This gives the statement without brackets
      * ( Color + day ) \* fishes
        1. This gives the statement with brackets
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 is 4
   2. Write an expression using mynumber to return ‘r’
      1. Mynumber = 4
      2. Watermelon[mynumber – 5]
5. Integers (numbers) and Strings (letters) are different data types in Python?
   1. What doesn’t “friend” + 5 work?
      1. Because friend isn’t defined with a variable, so you can’t just add 5 to find
   2. What is the difference between the ***int*** and ***str*** data types?
      1. Str is string, int is interger. (That’s about it)