1. In the below elements which of them are values or an expression? eg:- values can be integer or string and expressions will be mathematical operators.

**Ans- An expression is something that can be reduced to a value**, for example "1+3" is an expression, but "foo = 1+3" is not. If it doesn't work, it's a statement, if it does, it's an expression. as it cannot be reduced to a value. **A sequence of operands and operators, like a + b - 5 , is called an expression**.

**An Expression is a sequence or combination of values, variables, operators and function calls that always produces or returns a result value**. In the above example x , y and z are variables, 5 and 3 are values, = and + are operators.

\* = expressions

'hello' = string (value)

-87.8 = value

- =expression

/ = expression

* = expression

6 = value

1. What is the difference between string and variable?

Ans- **A Variable is a store of information, and a String is a type of information you would store in a Variable**.

3. Describe three different data types.

### Boolean type

The boolean type represents the values true and false . Only two values are possible .

1. used for false and 1 for true ..

### Numeric types

These are numerical data , which can be real no. , whole no , decimals

### String and text types

[Strings](https://en.wikipedia.org/wiki/String_(computer_science)) are a sequence of [characters](https://en.wikipedia.org/wiki/Character_(computing)) used to store words or [plain text](https://en.wikipedia.org/wiki/Plain_text), most often textual [markup languages](https://en.wikipedia.org/wiki/Markup_languages) representing [formatted text](https://en.wikipedia.org/wiki/Formatted_text). Characters may be a letter of some [alphabet](https://en.wikipedia.org/wiki/Alphabet), a digit, a blank space, a punctuation mark, etc.

Note = 99 is numeric data but if we write (“99”) it will be string in python..

4. What is an expression made up of? What do all expressions do?

Ans- The term "expression" means **a computer program statement that evaluates to some value**. A Boolean expression would evaluate to either true or false, such as ( money > 100 ).

5. This assignment statements, like spam = 10. What is the difference between an expression and a statement?

Ans - **An expression evaluates to a single value.** **A statement does not. An Expression always evaluates to a value.** **And,** **A statement does something, like creating a variable or displaying a value, it only does whatever the statement says**.

Ans- In programming language terminology, an “expression” is a combination of values and functions that are combined and interpreted by the compiler to create a new value, as opposed to a “statement” which is just a standalone unit of execution and doesn't return anything

6. After running the following code, what does the variable bacon contain?

bacon = 22

bacon + 1

Ans- 23

7. What should the values of the following two terms be?

Ans - 'spam' + 'spamspam' = 'spamspamspam'

'spam' \* 3 = 'spamspamspam'

8. Why is eggs a valid variable name while 100 is invalid?

Ans- **Variable names cannot begin with a number thats why eggs is valid and 100 is not.**

9. What three functions can be used to get the integer, floating-point number, or string version of a value?

Ans - The **int() , float() , and str( )** functions will evaluate to the integer, floating-point number, and string versions of the value passed to them.

10. Why does this expression cause an error? How can you fix it?

'I have eaten ' + 99 + ' burritos.'

Ans – It will give typeError: can only concatenate str (not "int") to str.. the conconate function is available only with string to string not with sting to intezer. We have to convert 99 which is a intezer to string first to get the desired result…

'I have eaten ' + ("99") + ' burritos.'