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: It is an expression because it is a mathematical operator which is used to perform multiplication operation

'hello'

Ans: It is a value because this is a string contains the word hello

-87.8

Ans: It is a value because it is a negative floating point number

-

Ans: It is an expression because it is a mathematical operator which is used to perform subtraction operation

/

Ans: It is an expression because it is a mathematical operator which is used to perform division operation

+

Ans: It is an expression because it is a mathematical operator which is used to perform addition operation

6

Ans: It is value because 6 is an integer

So, as a summary below are the values and expressions:

Values: ‘hello’, -87.8, 6

Expressions: \*, -, /, +

2. What is the difference between string and variable?

|  |  |
| --- | --- |
| String | Variable |
| String is a collection of characters | Variable is name that is a reference to an address where the value of the variable is stored. |
| Strings are immutable which means we can’t change the value of a string | Variables can be mutable |

3. Describe three different data types.

Ans:

1. Numbers

It is a data type used to store numbers such as integers, floating point numbers

1. Sequence

It is a data type used to store a collection of values such as list, string etc

1. Boolean

It is a data type used to store values True/False

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

Ans: An expression is made up of operators and operands. Expressions will perform the operations on the operands and evaluate a value.

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

Ans: Expression is a combination of operators and operands which will perform some operations on the operands based on operators given which will gives a resultant value.

A statement is a line of code which represents an action such as print statements, assignment statements etc.

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

bacon = 22

bacon + 1

Ans: The value of bacon will be 22 after running the above code because we are incrementing the value of bacon by 1 but we are not assigning the updated value to the variable bacon

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

'spam' + 'spamspam'

'spam' \* 3

Ans: 1) spamspamspam

2) spamspamspam

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

Ans:

Variable ‘eggs’ is valid because the first letter of the variable is an alphabet which is valid as per the variable rules. But the variable ‘100’ is not valid as the first letter of the variable is a digit which is invalid as per the variable rules.

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

Ans:

int() function is used to get the integer version of a value

float() function is used to get the floating-point version of a value

str() function is used to get the string version of a value

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

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

Ans:

The above expression will cause an error because concatenating strings and integer is not allowed in python. So, we can fix this by converting the integer 99 to string.

Corrected expression is: ‘I have eaten ‘ + str(99) + ‘ burritos.’