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.

\*

'hello'

-87.8

-

/

6

**Answer:**

**values are 🡺 “hello”, -87.8, 6**

**Expressions are 🡺 / , +, \*, -**

2. What is the difference between string and variable?

**Answer:**

**A variable is a container that can hold data of different data types, such as Boolean, string, and number**

**A string is a specific data type that represents a sequence of characters. It can be used to store sentences, addresses, or even sentences containing numbers, such as "My age is above 18 so that I can drive a car."**

3. Describe three different data types.

**Answer:**

**Integer 🡺 An integer is a whole number, such as 1, 2, 3, -4, -5, etc.**

**String 🡺 A string is a sequence of characters, such as "Yash", "I neuron Ai", "456", "a1b2c3", etc.**

**Boolean🡺 A Boolean is a data type that represents a binary value, which can be either True or False. Boolean values are often used in conditional statements and comparisons.**

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

**Answer:**

**An expression is made up of values, variables, operators, and function calls that evaluate to a single value. All expressions evaluate to a value, and can be used in different contexts, such as in assignment statements, as arguments to functions, or in conditional statements.**

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

**Answer:**

**An expression produces a value, while a statement performs an action. An assignment statement, like spam = 10, is a statement that assigns the value 10 to the variable spam. An expression, on the other hand, produces a value, like 9 + 3, which evaluates to 11.**

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

bacon = 22

bacon + 1

**Answer:**

**After running the code, the variable bacon contains the value 22, because the expression bacon + 1 evaluates to 23, but is not assigned to any variable.**

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

'spam' + 'spamspam'

'spam' \* 3

**Answer:**

**The first term 'spam' + 'spamspam' evaluates to the string 'spamspamspam'. The second term 'spam' \* 3 also evaluates to the string 'spamspamspam'.**

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

**Answer:**

**variable names must start with a letter or underscore, and can contain letters,** **numbers, and underscores** **. Since 100 does not start with a letter or underscore, it is not a valid variable**

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

**Answer:**

**The int() function can be used to get the integer version of a value, the float() function can be used to get the floating-point number version of a value, and the str() function can be 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.'

**Answer:**

**The expression causes an error because it tries to join a string 'I have eaten ' with an integer 99. To fix it, we can convert the integer to a string using str(99), like this: 'I have eaten ' + str(99) + ' burritos.'**