

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

Ans:

values : hello, -87.8, 6

Expressions: \*, -, /, +

2. What is the difference between string and variable?

Ans: String is a value that represents texts in single or double quotes. Variable is a type of identifier which holds a value that can be int, float, string, list, tuple, bool, dict etc.

E.g. my\_var = "hello" here my\_var is a variable that holds a string "hello".

3. Describe three different data types.

Ans: Lists : It can be made up of homogenous or heterogeneous items. List can be enclosed in the square brackets [ ]. Items can be int, float, string, list, tuple, bool, dict etc.

E.g. [1, 2, 3, 7, 8, 9, 's', 'u', 's', 'h']

Tuple: It is same like lists except it is immutable that means items can not be changed/modified/removed in the tuples. It can also contain int, float, string, bool, list, tuple, dict etc. as items.

E.g. t=(3,5,6,'aksh',6.7,True)

**Dictionary :** It is key- value pair data type. Keys can be int, float, string, tuple, etc. but it should be unique. Keys can not be list or dict. Values can be anything int, float, bool, string, list, tuple, dict etc.

E.g `d = {'key1': 'value', 234: "xyz", "akshada":67}`

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

**Ans.** Expressions can be made up of variables, constants and operators. It can be zero or more operands and zero or more operators to produce at least one output.

E.g. `23`, `a <<1`, `a + b` etc

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

**Ans.** Expressions can be made up of variables, constants and operators. It can be zero or more operands and zero or more operators to produce at least one output.

E.g. `23`, `a <<1`, `a + b` etc

Statements can be assigning a value to a variable, declaring a variable.

E.g. `spam = 10`

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

`bacon = 22`

`bacon + 1`

**Ans:** 22 because we added 1 to `bacon` but doesn't assign new value to original variable

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

`'spam' + 'spamspam'`

`'spam' * 3`

**Ans:** `'spamspamspam'`

`'spamspamspam'`

Both gives same output

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

**Ans:** There is naming convention for identifier (variable,function,class) in python in which identifier name can be alphanumeric but doesn't start with digit. It can contain digit but the name should be start with letter or underscore. (eg. `_100`, `a100`)

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

**Ans:** integer: `int()`, floating-point number: `float()`, string : `str()`

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

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

**Ans:** we can not concatenate string with integer(99).

We can write it as: `'I have eaten ' +str( 99) + ' burritos.'`