

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 is integers- 6 and string – 'hello' and -87.8 are float

Expression is * = multiply

- = subtraction

+ = add/sum

/ = true division

2. What is the difference between string and variable?

Ans.- Variables are symbols that hold a value like that integer, float, string, etc. and variable can hold empty box also to fill some data or value and string are the value which is hold by variables.

For Example - a = "name"

Here **a** is variables which holds the string values –"name" and "name" is string.

3. Describe three different data types.

Ans. - Data type means a variable have specified values for programming.

1. String – String is hold alphanumeric characters and represent by single/double quotes ex.= 'fsds'

2. integer- Integer are hold whole numbers means positive or negative numbers .

Ex. – 2 , 4, 56, -7 are integer

3. Float- Float hold number with decimal points .

Ex. - 2.5, 6.54 are float

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

Ans – An **Expression** is a sequence or combination of values, variables, operators and function calls that always produces or returns a result value.

Example: $x = 5$, $y = 3$, $z = x + y$

In the above example x , y and z are variables, 5 and 3 are values, $=$ and $+$ are operators.

So, the first combination $x = 5$ is an expression, the second combination $y = 3$ is an another expression and at last, $z = x + y$ is also an expression.

– An Expression always evaluates (calculate) to itself.

Evaluation of an expression: It simply means that, to calculate or to solve the value of something. Such as in the above example: $z = x + y$, which is equivalent to $z = 5 + 3$. So, here we are calculating the value of z . and, hence, $z = 8$.

Types of Expression in Python-

1. Constant Expression, 2. Airthmetical Expression, 3. Integral Expression, 4. Floating Expression,
5. Logical Expression, etc.

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

Ans:- An expression evaluates to a value and a Statement executes somethings.

Example: `spam = 10` it is a assignment statement which means a variable named spam is hold the value integer 10.

Difference between Expression and Statement-

- (1) An expression evaluate a value here spam hold a value is 10 means it is a sequence of values, variable and operators. And a statement executes something means here `spam = 10` is instructing to hold value 10 in spam variable.
- (2) Evaluation of an expression always Produces or returns a result value. Like that `spam = 10` and `a = spam + 20` means `a = 30` and Execution of a statement may or may not produces or displays a result value, it only does whatever the statement says. Like that `spam = 10` and `print(spam) = 10`
- (3) Every expression can't be a statement .but Every statement can be an expression.

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?

```
'spam' + 'spamspam'
```

```
'spam' * 3
```

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

`'spam' * 3 = 'spamspamspam'`

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

Ans:- eggs is a valid variable name because in python variable name can start with letter but 100 is invalid because in python variable name can not start with a number, special character and predefined keyword. 100 is a number so it is invalid.

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

Ans:- We can use **int()** for integers and **float()** for float and **str()** for strings.

Example - `a = int(12) >> a = 12 >> type(a) = int.`

`a = float(12) >> a = 12.0 >> type(a) = float`

`a = str(12) >> a = '12' >> type(a) = str`

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

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

Ans:- In this expression we use `'str'+int+'str'` and in python we concatenate only str to str or int to int that's occur a error. We can change the int. 99 to str. 99 and can fix like that

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