

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

Expression- *, -, /, +

2. What is the difference between string and variable?

Ans: String is an array of characters. Variable is an object that can be used to store arbitrary assigned values. A string can be stored in a variable.

3. Describe three different data types.

Ans:

- Numeric data type: Used to represent data with numeric values such as integers, float, etc
- Sequence data type: Used to store multiple values in an organized manner such as string, list, etc
- Boolean data type: Returns one of the two built-in values, True or False.

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

Ans: An expression is a combination of operators, functions and operands. Expressions produce another other value after interpretation.

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

Ans: Statements are instructions for the Python interpreter to execute. For example, assignment statements, while statements, for statements and if statements.

An expression is a combination of values, operators, and functions to be evaluated. The interpreter displays the result of the expression after interpretation.

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

```
bacon = 22
```

```
bacon + 1
```

Ans: 22

```
In [3]: 1 bacon = 22
        2 bacon + 1
        3 bacon
Out[3]: 22
```

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

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

```
'spam' * 3
```

Ans: output: 'spamspamspam'

'spam' + 'spamspam' - string catenation

'spam' * 3 - string multiplication

```
In [1]: 1 'spam' + 'spamspam'
Out[1]: 'spamspamspam'

In [2]: 1 'spam' * 3
Out[2]: 'spamspamspam'
```

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

Ans: Variable names cannot start with a number.

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

Ans: `int()`, `float()`, and `str()` functions can be used to get the integer, floating-point number, string version of the value passed to them.

```
In [5]: 1 x = 32.567
In [6]: 1 int(x)
Out[6]: 32
In [7]: 1 str(x)
Out[7]: '32.567'
In [8]: 1 float(x)
Out[8]: 32.567
```

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

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

Ans: This expression is trying to concatenate strings to integer type values and hence we get an error.

We can fix it simply by converting the integer value to a string.

```
In [10]: 1 'I have eaten ' + str(99) + ' burritos.'
Out[10]: 'I have eaten 99 burritos.'
```