

In []: 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

2\ What **is** the difference between string **and** variable?

3\ Describe three different data types.

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

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

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

bacon = 22

bacon + 1

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

'spam' + 'spamspam'

'spam' * 3

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

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

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

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

In []: Q1. values=-87.8,6,'hello'
 expressions=*,\-,/, -

In []: Q2. What **is** the difference between string **and** variable?
 Variables are symbols that we can use to store data **in** a program.
 We can think of them **as** an empty box that we fill **with** some data **or** value.
 Strings are data, so we can use them to fill up a variable.
 Declaring strings **as** variables can make it easier **for** us to work **with** strings throughout our Python programs.

In []: Q3. Describe three different data types.
Variables can store data of different types, and different types can do different things.

```

1.Text Type      :      str
2.Numeric Types :      int, float, complex
3.Sequence Types:      list, tuple, range
4.Mapping Type  :      dict
5.Set Types     :      set, frozenset
6.Boolean Type  :      bool
7.Binary Types  :      bytes, bytearray, memoryview
8.None Type     :      NoneType

```

Example	Data Type
x = "Hello World"	str
x = 20	int
x = 20.5	float
x = 1j	complex
x = ["apple", "banana", "cherry"]	list
x = ("apple", "banana", "cherry")	tuple
x = range(6)	range
x = {"name": "John", "age": 36}	dict
x = {"apple", "banana", "cherry"}	set
x = frozenset({"apple", "banana", "cherry"})	frozenset
x = True	bool
x = b"Hello"	bytes
x = bytearray(5)	bytearray
x = memoryview(bytes(5))	memoryview
x = None	NoneType

List Items

List items are ordered, changeable, and allow duplicate values.

```
thislist = ["apple", "banana", "cherry", "apple", "cherry"]
```

Tuple Items

Tuple items are ordered, unchangeable, and allow duplicate values.

```
thistuple = ("apple", "banana", "cherry", "apple", "cherry")
```

Set

A set is a collection which is unordered, unchangeable*, and unindexed.

```
thisset = {"apple", "banana", "cherry"}
```

Dictionary Items

Dictionary items are ordered, changeable, and does not allow duplicates.

Dictionary items are presented in key:value pairs, and can be referred to by key.

```
thisdict = {
    "brand": "Ford",
    "model": "Mustang",
    "year": 1964
}
```

In []: Q4. What is an expression made up of? What do all expressions do?
An expression is a combination of operators and operands that is interpreted and evaluated to produce a value.

In []: 5. This assignment statements, like spam = 10. What is the difference between an expression and a statement?
An expression can be defined as any element in our utility that evaluates to a value.

Statements represent a motion or command e.g print statements, mission statements.

An expression is any series of symbols that represents a value. For example, 2+2 is an expression that evaluates to the value 4.

```
For example: print("Hello")
```

In []: Q6. After running the following code, what does the variable bacon contain?

```
bacon = 22  
bacon + 1  
Ans. 22
```

In []: Q7. What should the values of the following two terms be?

```
'spam' + 'spamspam'  
  
'spam' * 3  
Ans. spamspamspam
```

In []: Q8. Why **is** eggs a valid variable name while 100 **is** invalid?
Ans. because variable cannot start **with** number **and** other special charcter
it only be start **with** letter **or** underscore

In []: Q9. What three functions can be used to get the integer, floating-point number, **or** string version of a value?
Ans. int()
float()
str()

In []: Q10. Why does this expression cause an error? How can you fix it?

```
'I have eaten ' + 99 + ' burritos.'  
Ans. 1.print(f"I have eaten {99} burritos.")  
2.print("I have eaten", 99,"burritos.")
```

In []: