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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.

\* => expression

'hello' => string value

-87.8 => integer value

- => expression

/ => expression

* => expression

6 => integer value

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2. What is the difference between string and variable?

String:

* It is one type of information
* it is the subset or one of kind of variable
* refers to value which represent the text

Variable:

* it is place holder of any data type
* it is a name given to identify something
* string is one type of variable whereas variable can hold anything

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3. Describe three different data types.

* Integer: these are the whole numbers
* String: sequence of characters enclosed within single/double quotes
* List:
  1. ordered data sequence
  2. mutable data type
  3. which can hold different data types
  4. has index
  5. enclosed with []
* Set
  1. Unordered data sequence
  2. Cannot hold duplicate data
  3. Enclosed with {}
* Tuple
  1. ordered data sequence
  2. immutable data type
  3. which can hold different data types
  4. has index
  5. enclosed with ()
* Dictionary
  1. Unordered data sequence
  2. Enclosed with {k:v}
  3. Value is mutable but not the Key
  4. Can hold different data type

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

* Expression is the combination different kind of operators say mathematical, logical etc.
* It expects at least two operands.
* Depending on the type of expression, it brings the result.
* Result may be of Boolean or Integer or String etc.

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

* Every line of code is the statement. And hence expression is also a statement.
* With respect to above mentioned assignment statement- spam=10: this is not an expression because expression expect at lease two operands. But here variable ‘span’ is assigned a direct value, not the result of any kind.

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

bacon = 22

bacon + 1

* Variable ‘bacon’ will contain the value 22 because, after addition operation on that variable, updated value not stored back to it. Hence it remains in it original value.

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

'spam' + 'spamspam'

'spam' \* 3

* spamspamspam

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

* As per the variable naming standards, variable should not start with number.

Hence eggs is a valid variable named while 100 is invalid.

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

* int(<value>) - convert <value> to the integer
* float(<value>) – convert <value> to the floating-point number
* str(<value>) – convert <value> to the string

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

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

* Above statement is trying to concatenate integer with string, which is invalid.
* Fix: convert the integer to string like below  
  ‘I have eaten ‘ + str(99) + ‘ burritos.’

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