1. In the below elements which of them are values or an expression?

- ``: Expression (multiplication operator)

- `'hello'`: Value (string)

- `-87.8`: Value (floating-point number)

- `-`: Expression (subtraction operator)

- `/`: Expression (division operator)

- `+`: Expression (addition operator)

- `6`: Value (integer)

2. What is the difference between string and variable?

- A string is a sequence of characters enclosed in quotes (e.g., `"hello"`, `'world'`).

- A variable is a name that can hold a value, which can be a string, number, or other data types (e.g., `name = "Alice"`, `age = 30`).

3. Describe three different data types.

- Integer: A whole number without a decimal point (e.g., `42`, `-7`).

- Floating-point number: A number that has a decimal point (e.g., `3.14`, `-0.001`).

- String: A sequence of characters enclosed in quotes (e.g., `"hello"`, `'Python'`).

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

- An expression is made up of values, variables, and operators (e.g., `2 + 3`, `a b`).

- All expressions evaluate to a single value.

5. What is the difference between an expression and a statement?

- An expression is any combination of values, variables, and operators that evaluates to a single value (e.g., `2 + 3`, `b 5`).

- A statement is a unit of code that performs an action (e.g., an assignment statement like `spam = 10`).

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

bacon = 22

bacon + 1

- The variable `bacon` will still contain `22`. The expression `bacon + 1` calculates the value `23` but does not change the value of `bacon`.

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

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

- `'spam' 3`: `'spamspamspam'`

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

- `eggs` is a valid variable name because it follows the rules for naming variables (it starts with a letter and contains only alphanumeric characters and underscores).

- `100` is invalid because variable names cannot start with a digit.

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

- `int()`: Converts a value to an integer.

- `float()`: Converts a value to a floating-point number.

- `str()`: Converts a value to a string.

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

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

- This causes an error because you cannot concatenate a string (`'I have eaten '`) with an integer (`99`) directly.

- You can fix it by converting the integer to a string:

'I have eaten ' + str(99) + ' burritos.'