# Assignment 1 – Answers

## 1. Identify values and expressions

\*\*Values:\*\* 'hello', -87.8, 6

\*\*Expressions:\*\* -, /, +, \*

Values are data like strings and numbers. Expressions are operations that compute something.

## 2. Difference between string and variable

A \*\*string\*\* is a sequence of characters enclosed in quotes (e.g., "Python").

A \*\*variable\*\* is a name used to store data (e.g., name = "Python").

A string is data. A variable is a label for storing data.

## 3. Describe three different data types

1. \*\*Integer (int):\*\* Whole numbers like 5, -12

2. \*\*Float (float):\*\* Numbers with decimals like 3.14

3. \*\*String (str):\*\* Text in quotes like 'hello'

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

Expressions are made up of values, variables, and operators. All expressions evaluate to a single value.

## 5. Difference between an expression and a statement

\*\*Expression:\*\* Returns a value (e.g., 2 + 3)

\*\*Statement:\*\* Performs an action (e.g., x = 5)

Every expression is part of a statement, but not every statement is an expression.

## 6. Value of bacon after code runs

```python

bacon = 22

bacon + 1

```

The variable `bacon` still holds 22. The addition is done but not reassigned.

## 7. Values of the terms

'spam' + 'spamspam' → 'spamspamspam'

'spam' \* 3 → 'spamspamspam'

Both produce the same result by combining strings.

## 8. Why is eggs valid and 100 invalid as a variable name?

Variable names must start with a letter or underscore.

`eggs` is valid because it starts with a letter.

`100` is invalid because it starts with a number.

## 9. Three functions to convert types

- `int()` → Converts to integer

- `float()` → Converts to float

- `str()` → Converts to string

## 10. Why does this expression cause an error and how to fix it?

```python

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

```

This causes an error because you can't concatenate a string with an integer.

\*\*Fix:\*\* Convert 99 to string:

```python

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

```