

## Answers

### 1. answer

#### 1. Values:

- 'hello'
- -87.8
- 6

### Expressions:

- \*
- /
- +

2. String: A string is a sequence of characters enclosed within single ("), double (" "), or triple (" " or "" "" ) quotes. It represents textual data.

Variable: A variable is a symbolic name that represents or refers to a value. It stores data that can be changed or manipulated during program execution.

3. Integer: Integer data type represents whole numbers without any decimal point. Examples include -3, 0, 42.

Float: Float data type represents numbers that have a decimal point. Examples include 3.14, -0.5, 2.0.

String: String data type represents sequences of characters, typically used for textual data. Examples include "hello", 'world', "123".

4. An expression is made up of values, variables, operators, and function calls. Expressions evaluate to a value.

Expressions perform operations such as arithmetic calculations, comparisons, or function invocations, resulting in a single value. They represent the computation that needs to be carried out by the programming language.

5. Expression: An expression is a combination of values, variables, operators, and function calls that evaluates to a single value. Expressions can be simple or complex but always resolve to a value.

Statement: A statement is a complete instruction that performs some action. It can include expressions but can also encompass control flow structures like loops and conditionals. Unlike expressions, statements do not necessarily evaluate to a value. They are executed for their side effects or to control the flow of the program.

In Python, an assignment statement like `spam = 10` is an example of a statement because it assigns a value to a variable without necessarily returning a value.

6. After running the code `bacon = 22`, the variable `bacon` contains the integer value 22.

However, the expression `bacon + 1` doesn't modify the value of `bacon` itself; instead, it evaluates to 23.

7. The values of the following two terms would be:  
'spam' + 'spamspam': This expression concatenates two strings, resulting in 'spamspamspam'.  
'spam' \* 3: This expression repeats the string 'spam' three times, resulting in 'spamspamspam'.

8. In Python, variable names must adhere to certain rules:  
Variable names can contain letters (both uppercase and lowercase), digits, and underscores.  
However, variable names cannot start with a digit. They must begin with a letter or an underscore.  
Since "eggs" starts with a letter, it is a valid variable name. However, "100" starts with a digit, making it an invalid variable name according to Python's naming conventions.

9. Three functions commonly used in Python to convert values are:

`int()`: Used to convert a value to an integer.

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

`str()`: Used to convert a value to a string.

10. This expression causes an error because Python doesn't allow concatenating strings with integers directly.

To fix it, you can convert the integer to a string using the `str()` function before concatenating:

