1.

a. Numbers: Represent numeric values in Python, such as integers (int), floating-point numbers (float), and complex numbers (complex). They are used for mathematical operations.

b. String: A sequence of characters enclosed in single, double, or triple quotes. Strings are used to store and manipulate text data.

c. List: An ordered, mutable collection of items that can hold mixed data types. Lists are enclosed in square brackets [].

d. Tuple: An ordered, immutable collection of items, often used to store related data that shouldn’t change. Tuples are enclosed in parentheses ().

e. Dictionary: An unordered, mutable collection of key-value pairs. Keys are unique, and dictionaries are enclosed in curly braces {}.

2.

a. 4 \* (6 + 5) is 44

b. 4 \* 6 + 5 is 29

c. 4 + 6 \* 5 is 34

3. What is the type result for 3 + 1.5 +

Answer is Float

4. What will you use to find a number's square root, as well as it's square

num = 5

square = num \*\* 2

print(square)

5.

a. word = "hello"

print(word[1])

b. word = "hello"

reversed\_word = word[::-1]

print(reversed\_word)

c. First Method of Returning "o" using positive indexing:

word = "hello"

print(word[4])

d. Second method using negative indexing

word = "hello"

print(word[-1])

6. LIST: two ways of returning list [0,0,0]

Method 1 using multiplication:

a = [0] \* 3

print(a) //gives [0, 0, 0]

Method 2 using loop:

a = [0 for \_ in range(3)]

print(a) //gives [0, 0, 0]

7. Reassigned "hello" in this nested list to say "goodbye" instead

my\_list = [1, 2, [3, 4, 'hello']]

my\_list[2][2] = "goodbye"

print(my\_list[2][2])

//gives [1, 2, [3, 4, 'goodbye']]

8. Sorting: sort out the list: list4 = [5,4,3,2,1]

list4 = [5, 4, 3, 2, 1]

list4.sort()

print(list4) //output is [1, 2, 3, 4, 5]

9. Dictionaries

a. d = {'simple\_key': 'hello'}

print(d['simple\_key'])

b. d = {'k1': {'k2': 'hello'}}

print(d['k1']['k2'])

c. d = {'k1': [{'nest\_key': ['this is deep', ['hello']]}]}

print(d['k1'][0]['nest\_key'][1][0])

10. What's the major difference between Tuples and List?

Lists are mutable, you can change, add, or remove items you creat them while Tuples are immutable, once created, they cannot be changed.

11. How to create a Tupls

tuple = (1, 2, 3)

print(tuple)

12. SETS

What's Unique About Sets: A set in Python is unique because it only keeps distinct items, has no order, and supports fast mathematical operations.

13. Use a set to find the unique values of the list below

List5 = [1,2,2,33,4,4,11,22,3,3,2]

list5 = [1, 2, 2, 33, 4, 4, 11, 22, 3, 3, 2]

unique\_values = set(list5)

print(unique\_values)