Task 2

1. What are the direct 2 methods to construct a tuple that has only a single item? How many ways are there to construct a list with a single item?

2. How could you create w from x so that w can be changed without affecting x （x is a list） ?

3.Initialize a list containing 4 , 3.1415 , 1.0 , 2+4j , 'Hello' , 'World'. How could you:

i>. Delete 1.0 if you knew its position? What if you didn't know its position?

ii>. How can the list [1.0, 2+4j, 'Hello'] be added to the existing list?

iii>. How can the list be reversed?

iv>. In the extended list, how can you count the occurrence of 'Hello'?

4>.

$$z = \begin{bmatrix} 1 & 2 & 1 & 2 \\ 3 & 4 & 3 & 4 \\ 1 & 2 & 1 & 2 \end{bmatrix}$$

$$y = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$$

How can you slice y from z?

5. Show that logspace(0,2,21) can be constructed using linspace and 10 (and **). Similarly, show how linsapce(2,10,51) can be constructed with logspace and log10.

6. cumsum computes the cumulative sum while diff computes the difference. Is diff(cumsum(x)) the same as x? If not, how can a small modification be made to the this statement to recover x?

7. Compute the exp of,y = [ln0.5, ln1 , lne]

Note: You should use log and the constant numpy.e to construct y.

8. Show that setdiff1d could be replaced with in1d and intersect1d using x = [1 2 3 4 5] and y = [1 2 4 6]? How could setxor1d be replaced with union1d, intersect1d and in1d?