Python Practice Solution

1.answer:3

Because in the if statement

a ==1 or 2:

if a number is greater than 1, so it is true. That means a=1 or 2 is equivalent to

a==1 or True:

therefore, it is always true and print a

```
In [3]: if a == 1 or 2:
   ...:     print(a)
   ...: else:
   ...:     print(1)
   ...:
3
```

if a==1 or a==2:

if a in [1,2]:

2.

Answer: TypeError: list indices must be integers or slices, not tuple

```
In [4]: a=[(1,2,3),(4,5,6)]

In [5]: a[0,1]
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[5], line 1
----> 1 a[0,1]

TypeError: list indices must be integers or slices, not tuple
```

Why does it happen, because the index of list is like a[0][1] not a[0,1]

a[0][1]

a[0] ->(1,2,3) [1,2,3] =b

b[1]

3.

```
In [6]: print(print(print(1)))
1
None
None
```

Because the nested function is executed from inner to outer,

First step: print(1) -> 1

Second: print(None) -> None

Third: print(None) -> None

因为 print 函数返回就是 None

如果一个函数他没有返回的值，例如

```
def a(x):
    x**2
```

```
x = 10

def outer():
    x = 20
    def inner():
        nonlocal x
        x = 30
        print("inner:", x)
    inner()
    print("outer:", x)

outer()
print("global:", x)
```

x = 10 global
outer()
x = 20 local_outer
inner()
nonlocal x local_inter -> local_outer
nonlocal 就是说他在这个函数里面不是 local，他就能到上一级的函数，到 outer()
x = 30 local_outer
30
30
10

5.
Construct a list [0, 1, 4, ···, 100^2]
Use one line
list_1 = [x**2 for x in range(101)]
list_2 = [x**2 for x in[1,2,3]]

if-else statement

if:
xxx
else:
xxx

f(x) if a else b

6.

```
a = [1,2,3,4,5,6]
for i in range(len(a)):
        b = a[i:]
        b.reverse()
        a[i:] = b
```

7.

n is smaller than the number of decimal of x

x*x = x'*x'

x=211

n=1

x*x=11*11=121

21*11

x**y

n is greater than the number of decimal of x:

```
for _ in range(y):
     result *= x
     if len(str(result)) > n:
          result %= 10**(n+1)
result //= 10**n
print(str(result))
```