Lecture 06 In-class work
Problem 3

Find the asymptotic running time of the following procedure

```python
n = input("Enter an integer number greater than 5:")  # 1 step
for i in range(n):  # n iterations
    for j in range(n//10):  # n//10 iterations
        print("i = ", i, ", j = ", j)  # 1 step
```

Therefore, \( T(n) = 1 + n \times \left\lfloor n/2 \right\rfloor = \Theta(n^2) \)

Answer: \( T(n) = \Theta(n^2) \)

Problem 4

```python
a="Frank"
b=a
b+=" is 10 years old"
print(a,"\t",b)
# Frank   Frank is 10 years old
```

```python
import copy
A=[[1,2],7,10]
c=A
```

```python
c[0]=[1,2,3]
```

```python
print(a,"\t",b)
# Frank   Frank is 10 years old
```
b = copy.deepcopy(A)
b.append(5)

print(A, "\t", c, "\t", b)

a = 3
b = [a, 'b', 'c']
def f2(x,y):
    x-=3
    y.append('d')
y=[1,2,3,4]
print(x,\"\t\",y)

Noting the definition of function, but the body of the function is not executed yet,

Inside function f2:
outside function f2:

3 ['a', 'b', 'c', 'd']

This is what we will see printed (all print statements accumulated):
Frank    Frank is 10 years old
[[1, 2, 3], 7, 10]  [[1, 2, 3], 7, 10]  [[1, 2, 3], 7, 10, 5]
0         [1, 2, 3, 4]
3         ['a', 'b', 'c', 'd']
Problem 5

l1 = [1, 2, 3]
a = 2
b = 3

l2 = copy(l1)
l2[1] = 5

a = 4

l1 = [1, [1, 2]]
l3 = copy(l1)

l3[1][1] = 5
b = 5