4-a

(3,4)

(3,5)

(4,5)

(1,5)

(2,5)

4-b-1

If it is a decreasing array from the set{1,2,…,n}

4-b-2

(n-1+1)\*(n-1)/2 = (n^2-n)/2

4-c

Insertion sort的做法就是不斷的向後判斷是不是inversion如果是inversion就swap 然後就繼續向後比較

4-d

def merge(l1, l2)

while not (index\_l == left\_max or index\_r == right\_max)

if l1[index\_l] > l2[index\_r]

merge\_list.append(l2[index\_r])

index\_r += 1

else

merge\_list.append(l1[index\_l])

invers += index\_r

index\_l += 1

for i in range(index\_l, left\_max)

merge\_list.append(l1[i])

invers += index\_r

for i in range(index\_r, right\_max)

merge\_list.append(l2[i])

return merge\_list