1. Yes, there is a difference.

In the function 'old_sum' if we enter any negative value then it jumps out of the loop and thus returns 0. But if we enter any negative value in 'sum' function then it will calculate according to the formula $n*(n+1)/2$. Thus it will return a value which will be wrong.

2. Yes, there is a difference.

If n=2, and both a[0] and a[1] are same then 'old_max2' returns 1 while 'max2' returns 0.

Case 1.

n = 2

a[0] = 6

a[1] = 6

old_max2(2, a) = 1

max2(2, a) = 0

Case 2. The other case is that if n>2 and a[0] and a[1] are 2nd largest elements then 'old_max2' will return 0 while 'max2' will return 1.

n = 4

a[0] = 5

a[1] = 5

a[2] = 1

a[3] = 8

old_max2(4, a) = 0

max2(4, a) = 1