1.

i)

Number of comparisons: $(n-1)+(n-2)+(n-3) +\ldots+ 3 + 2 + 1$ which can be simplified into by using the formula for the sum of the first n natural numbers. Which is $n(n-1)/2 = O(n^2)$

ii)

Number of swaps: In each comparison there is a 50% chance to swap so we take the $n(n-1)/2$ and divide by 2 making $n(n-1)/4$ which is $O(n^2)$

4.

This is what we expected, as both graphs represented a quadratic curve. Also, the swap graph seemed to be shifted down by a half when compared to the comparisons graph. Which is what we expected, as the swap equation is just the comparisons' equation but divided by 2.