1.
i)
Number of comparisons: (n-1)+(n-2)+(n-3) +…+ 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.