True/False - No explanation needed. (2pts)

1. The equation $x_1 + x_2 + x_3 + x_4 = 10$ in positive integers has as many solutions as trying to feed 4 (different) dogs with 10 (identical) biscuits. True/False

2. The Quick Sort algorithm is, on the average, faster than the Bubble Sort algorithm because the number of inversions in the list being sorted decreases faster during the Quick Sort algorithm. True/False

Problems - Need justification. No justification means **zero**!

1. How many ways there to distribute 8 indistinguishable balls into 4 distinguishable bins if each bin contains at least one ball? (5pts)

2. How many ways are there to deal 10 cards from a deck of 52 cards to 4 players (allowing the possibility of a player getting zero cards) if the players are indistinguishable? (Your answer may be in terms of Stirling numbers.) (5pts)