True/False - No explanation needed. (For each: 1 point if correct, 0 points if not answered, -1 points if incorrect)

1. The maximum number of inversions in a list of 7 numbers is $P(7, 2) = 42$. True/False

2. We need to add several Stirling numbers of the second kind in order to count the ways to distribute distinguishable balls to indistinguishable boxes because all situations split into cases according to how many boxes are actually non-empty. True/False

Problems - Needs justification.

1. A sandwich store sells 7 different types of sandwich. Jamie wants to buy 30 sandwiches for a party. How many possible options does Jamie have if she needs at least 3 of each type? You only need to write a formula, not find the actual number. (10 points)