

CSE 312: Foundations of Computing II  
Quiz Section #1: Permutations and the Product Rule

1. In Schnapsen, assuming the stock is not closed, how many possible orderings of the stock are there, given the cards you have seen ...
  - (a) ... before trick 1?
  - (b) ... before trick 2?
  - (c) ... before trick 3?
  - (d) ... before trick 4?
  - (e) ... before trick 5?
  
2. In the game of bridge, a hand consists of 13 cards. Given a bridge hand consisting of 5 spades, 2 hearts, 3 diamonds, and 3 clubs, in how many ways can the hand be arranged so that the cards of each suit are together ...
  - (a) ... but not necessarily sorted by rank within each suit?
  - (b) ... and each suit is sorted in ascending rank order?
  - (c) ... and each suit is sorted in ascending rank order and the suits are arranged so that the suit colors alternate?
  
3. Permutations of objects, some of which are indistinguishable.
  - (a) How many permutations are there of the letters in DAWGY?
  - (b) How many permutations are there of the letters in DOGGY?
  - (c) How many permutations are there of the letters in GODOGGY?