1. NORTH: 12; SOUTH 11; N & S TOTAL: 23
WEST: 13 EAST: 4; E & W TOTAL: 17 TOTAL OF 4 HANDS? 40

2. How many High Card Points are there in a deck of 52 cards? 40
   What is the average number of High Card Points that each player receives on each hand? 10
   How many HCP’s do you think you need for a “strong” hand? About 13-17; for a “very strong” hand? About 18+
   How few HCP’s do you think you have for a “weak” hand? Under 7 or so; for a “very weak” hand? Under 4
   What is the highest number of HCP you could be dealt in one hand? 37
   There are 16 Face Cards, a player can have all but 3 Jacks. the lowest? 0

3. These questions require that you know about “Combinations”. Notation: C(n, r) or nCr or \( \binom{n}{r} \).
   How many different hands are possible for North? C(52, 13) = 6.35x10^{11} = 635 billion
   Write each answer in the form 1 of every _____ hands. Determine the probability that your 13-card hand:
   A. has zero High Card Points? 1 of every 275 \[ \frac{C(36,13)}{C(52, 13)} \] = \( [0.00364]^{-1} = 275 \)
   B. has the maximum number of HCP? 1 of every 159 billion \[ \frac{4}{C(52, 13)} \] = \( C(52, 13)/4 = 159 \) Billion
   C. has no Honor Cards: 1 of every 1,828 \[ \frac{C(32,13)}{C(52, 13)} \] = \( [0.000 457]^{-1} = \)
   D. has exactly one Void [no cards in one suit]? 1 of every 20 Approx: \[ 4\times C(39,13) / C(52, 13) \] =
   E. On 3-27-18 at STLBC, Dummy’s highest card was an 8. The probability of that is 1 of every 16,960

Given the total HCP of both partners, this list estimates the number of tricks that can be taken in NT: