Bonus Problems, Homework 1, Math 20

July 1, 2009

The following two problems are for extra credit. To read the rules of the games of Risk and Texas Hold'em, I suggest using Google.

Problem 1 Alice and Bob are playing Risk. Alice has 5 soldiers in Eastern United States while Bob has 2 soldiers in Western United States. Alice attacks Bob with the plan of stopping the attack if at some point she has only one more soldier than Bob (3 versus 2 or 2 versus 1).
(**a**) What is the probability of Alice taking over Western United States from Bob with this strategy?

(**b**) What about if Alice attacks nonstop until she gets down to one soldier (at which point the rules forbid her of attacking more)?

Problem 2 Alice is playing Texas Hold'em with Bob. They have all their chips in after the flop is dealt. Alice has Ace of hearts-King of hearts while Bob has Jack of spades-Ten of spades. The flop is J of hearts, Ten of hearts, 2 of Clubs. What is the probability that Alice will win the hand?