DISCUSSION FOR 3RD TUTORIAL

DATE: MONDAY OCT 25 (LBT01), FRIDAY OCT 29 (LCT01), MONDAY NOV 1 (LBT02 & LBT03) , FRIDAY NOV 5 (LCT02)

A drawer contains 20 shirts: 4 tan shirts, 7 white shirts and 9 black shirts. What is the minimum number of shirts needed to be pulled from the drawer in order to be guaranteed to get 7 shirts of the same color? (Note: the question is not asking, "if the white shirts are on top what is the minimum number needed to remove from the drawer?," the key word in that phrase is 'guaranteed').

Next, think about how to generalize this problem. There are lots of ways. How many shirts must be pulled out of the drawer to get 7 black shirts?

Next, ask how your answer changes if you change the number of shirts of any one kind. If there are 300 black shirts? If there are a_1 tan shirts, a_2 white shirts, and a_3 black shirts? (note: your answers may be different if $a_i < 7$ or $a_i \geq 7$)