

8/10/21

Agenda: ① Assignment Qs. 2, 4, 5(b), 6
 Need little clarification ← very good → Good
 A lot of clarification.

(Q6) R_k : k^{th} ball is red.

G_k : k^{th} ball is green.

$W_k := R_k^c \cap G_k^c$: k^{th} ball is white.

(a) $W_1 = R_1^c \cap G_1^c$ (b) $G_1 \cap (R_2 \cup G_2)$.

(c) $(R_1 \cap R_n) \cup (G_1 \cap G_n) \cup (W_1 \cap W_n)$

(d) $\bigcup_{\substack{\text{per sum} \\ \text{of } \{1, 2, 3\}}} (R_{\sigma(1)} \cap G_{\sigma(2)} \cap W_{\sigma(3)}).$

(Q4)

$\Omega = \{ (\overbrace{a_1 \dots a_1}^{k \text{ times}} \overbrace{a_2 \dots a_2}^{k \text{ times}} \dots \overbrace{a_n \dots a_n}^{k \text{ times}} : a_i \in \{0, 1\} \forall i \}.$
 [Can also use (a_{ij}) with $a_{ij} = a_{ik} \forall i, j, k$]

(Q2) $E_i \rightarrow i^{\text{th}}$ box empty, then $A = \bigcap_{i=1}^{n+1} (E_i \cup E_{i+1})$.
 6 } What $\rightarrow E_j = \{ p_i \neq j \forall i \}.$
 7 } is $\rightarrow E_j = \{ x_j = 0 \} \Rightarrow E_j \cup E_{j+1} = \{ x_j x_{j+1} = 0 \}$
 8 } $E_i?$

(Q5b) What is the experiment?

2, 5 Which of these are friends?
 3, 4 Which are not?

Let's say a Fb if a, b are friends.

1F2 1F3 1F4 1F5 ... 2F3 ... 4F5.

Out 1) T F F T F F F F T
 come 2) F T T F F F F F F

Put all the trues together.

① $\{ \{1, 2\}, \{1, 4\}, \{4, 5\} \}.$
 ② $\{ (1, 3), (1, 4) \}$

Let $S = \{ \{1, 2\}, \{1, 3\}, \dots, \{4, 5\} \}$

Then

$\Omega = \{ \text{set of all subsets of } S \}.$

$E_{a,b,c} = \{ T \in \Omega \mid \{a, b\}, \{b, c\}, \{a, c\} \in T \}$

$\Rightarrow E = \bigcup_{\substack{a, b, c \\ \in \{1, 2, 3, 4, 5\} \\ \text{distinct}}} E_{a,b,c}$