Physics 341 - Lecture 27

$a = 5$

$b = 4$

$n = 1$

SS_A ✓

SS_B ✓

~~SS_{AB}~~

SS_{ERROR} ✓

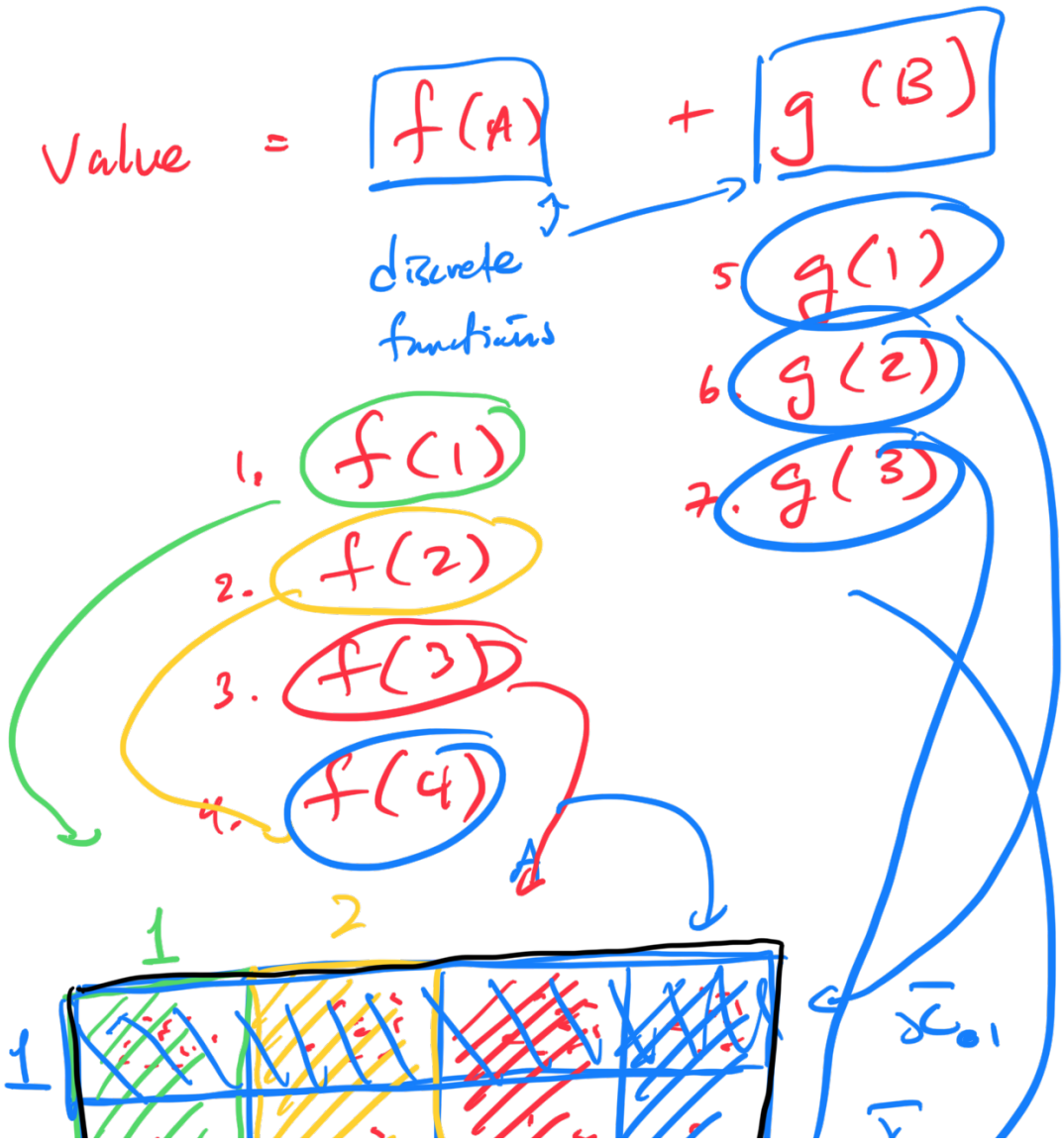
SS_{TOTAL}

A (coating)

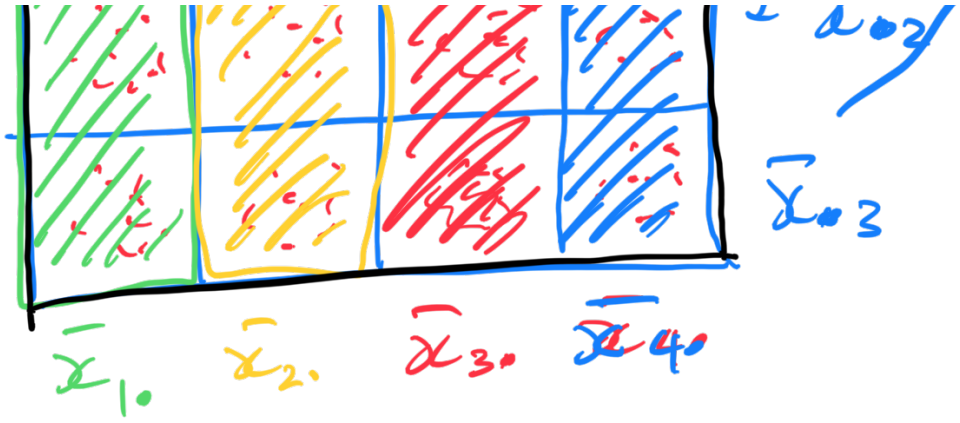
	1	2	3	4
1	n=1	n=1	n=1	n=1
				n=1

B				
(sol)	2	n=1		
	3	n=1	n=1	n=1	n=1

b) Compute the model parameters.



B



$\bar{\bar{x}}$

MODEL

model parameters.

$$\text{value}_{ik} = \mu + \alpha_i + \beta_k$$

$\mu = \bar{\bar{x}}$

$\alpha_1 = \bar{x}_{1\cdot} - \bar{\bar{x}}$

$\alpha_2 = \bar{x}_{2\cdot} - \bar{\bar{x}}$

$\vdots$

$\beta_1 = \bar{x}_{\cdot 1} - \bar{\bar{x}}$

$$\text{Value}_{11} = \mu + \alpha_1 + \beta_1$$

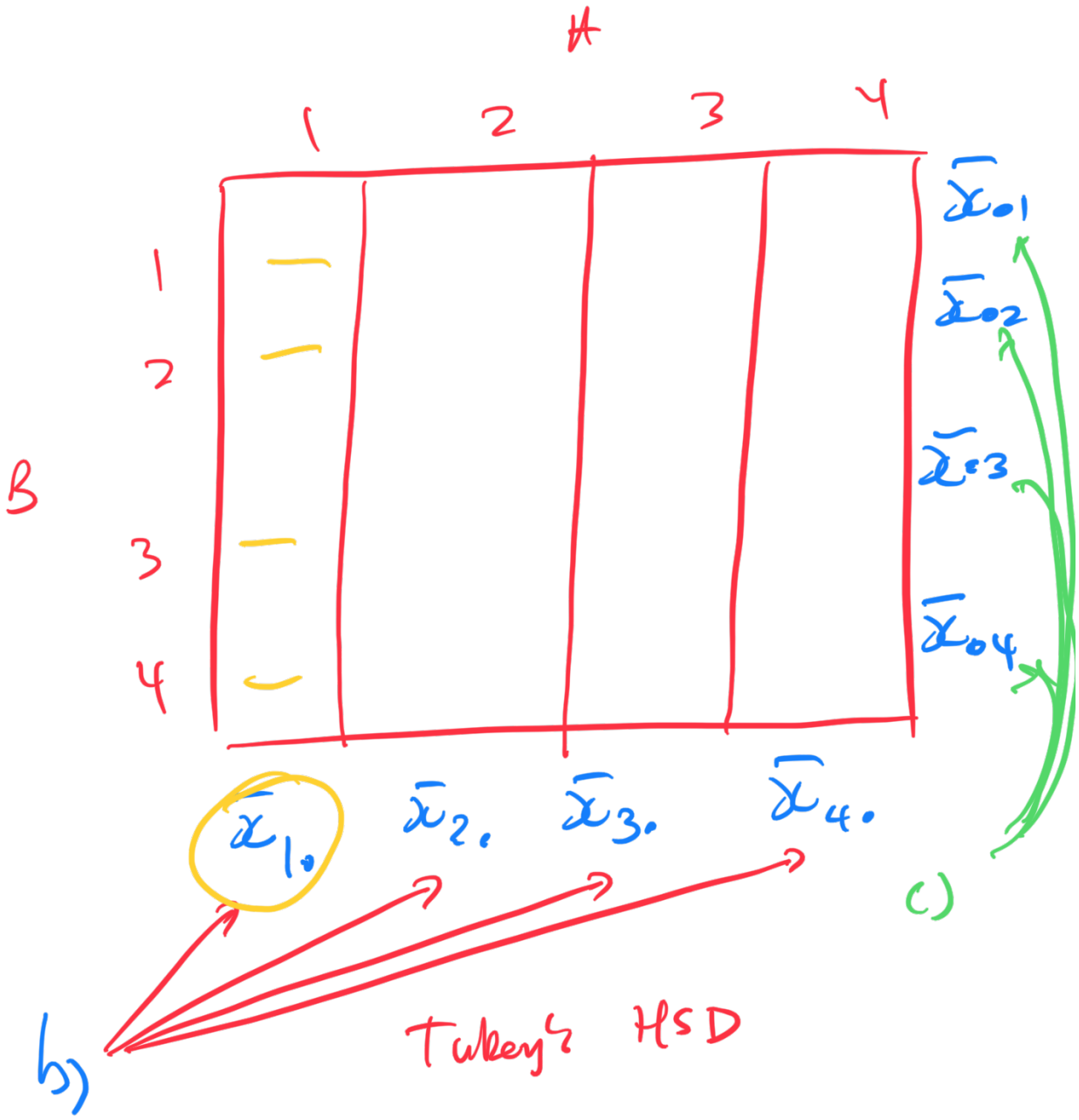
$$= 49.67 + 3 + 3.083$$

$$= \boxed{55.75}$$

$$\text{Value}_{43} = \mu + \alpha_4 + \beta_3$$

$$= 49.67 + (-1.67) + (0.0833)$$

$$= \boxed{48.08}$$


A
1
2
3
4
B
1
2
3
4
$\bar{x}_{01}$
$\bar{x}_{02}$
$\bar{x}_{03}$
$\bar{x}_{04}$
$\bar{x}_{1.}$
$\bar{x}_{2.}$
$\bar{x}_{3.}$
$\bar{x}_{4.}$
c)
b)
Tukey's HSD