

# HOMEWORK 1

1:  $nPr = {}^{250}P_2 = \frac{(250)!}{(248)!} = 6225 \#$

2:  ${}^5P_3 = \frac{5!}{3! * 2!} = 10 \#$

3: "6SNA" C      1x2x2x2x1=8 #  
 "4N1D" C  
 "3S1P1E" C  
 "2L2W" C

4: each Player only one reward  
 No Reward

$\Rightarrow$  Each Player has 2 Probabilities (A) 0.9 (B) 0.1  
 $\Rightarrow 2^3 = 1073741824 \#$

5:  $\Rightarrow$  No arrangement  
 $\Rightarrow {}^nC_r = \frac{n!}{(n-r)! * r!}$

$\Rightarrow {}^6C_3 = \frac{6!}{3! * 3!} = 20 \#$

6:  $\therefore f \Rightarrow$  Does not contain "7", ~~1pt~~

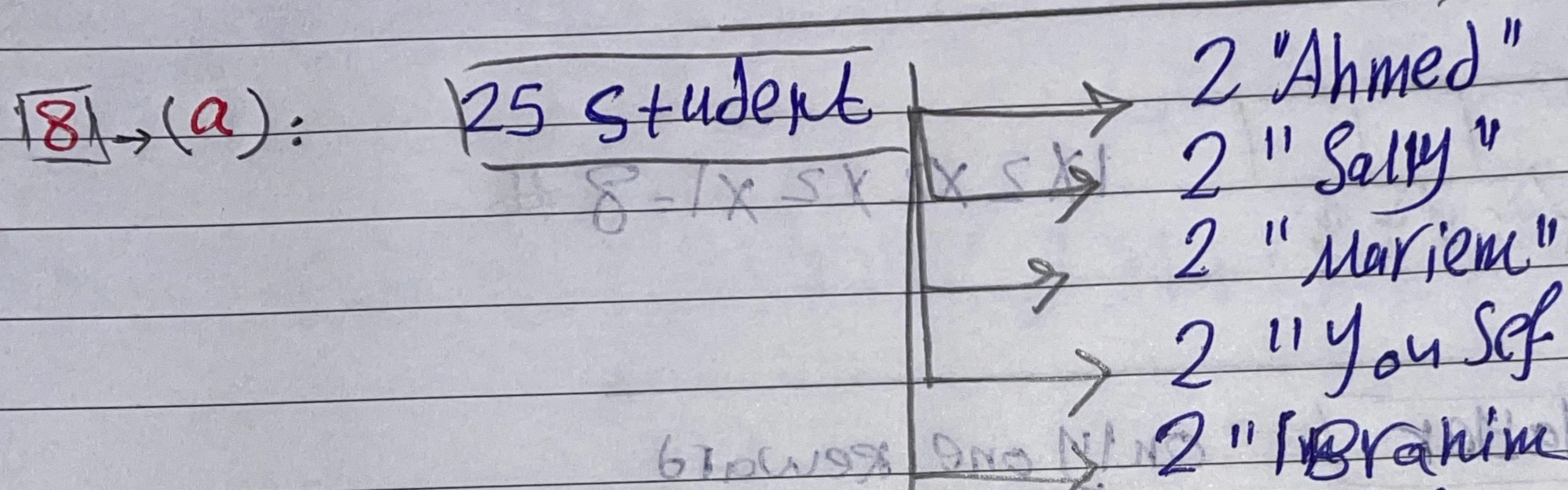
$\Rightarrow P(7) = \frac{0}{10} = 0$   
 $\Rightarrow$  there is No Probability

التاريخ:

- 7: 1<sup>st</sup> Book  $\rightarrow$  6 choices  
 2<sup>nd</sup> Book  $\rightarrow$  5 choices  
 3<sup>rd</sup> Book  $\rightarrow$  2 choices

$$\therefore \frac{6 \times 5 \times 2}{3!} = 10$$

$\nearrow$  Since order does not matter



Group of 4) Students with only one different name?

$$\rightarrow 25 - 5 = 20$$

$\rightarrow$  Since No order

$$\rightarrow {}^n C_r = \frac{20!}{14!} = \frac{20!}{14! \times 6!} = 38760$$

$$= 38760$$

(b):  $14 = 10 + 4 \rightarrow$  Distinct

$$2I2S \quad 2y \quad 2A2M + 2900 + 8$$

$${}^{14} C = \frac{14!}{2!(2!)^2(2!)^2(2!)^2(4!)} = \frac{14!}{(2!)(2!)(2!)(2!)(2!)(4!)} = 113513400$$

$$= 113513400$$