- The possible cases is calculated by Combination of repetition afbect -- + m+ $n+o = \beta \Rightarrow 15H\beta = (15+8-1)(\beta = 22C\beta)$ 15 Statents
- D number of cases that no student will have to answer more.

 than I question
 - = 8 students answer one question each
 - = choosing & student out of 15 considering the order
 - = 15 Pp = 15! (15-8)!

So, the probability is

i combination of the integers that meet our criteria;

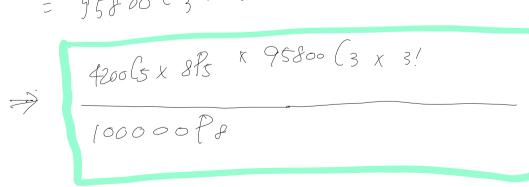
$$\frac{5P_2 \times 5}{0.0} \times \frac{7P_2}{0.0} = 5x4 \times 5 \times 7x6$$

$$\frac{5P_2 \times 5}{0.0} \times \frac{7P_2}{0.0} = 4200$$

out of 4200, randomly choose 5 and place them In any of 8 spots (order matters)

= f200C5 x 8P5

out of (100000 - 4200) randomly choose 3 and place them in any of 3 spots (ordermatters) = 95800 (3 × 3!



#3

PCA) =
$$\frac{a + last 2}{3 \text{ different dices combination}}$$

= $l - \frac{as \text{ dice have number } \ge 4}{6 \times 6 \times 6}$
= $l - \frac{3 \times 3 \times 3}{6 \times 6 \times 6} = \frac{3 \times 3 \times 3}{6 \times 6 \times 6} = \frac{3^3(2^3 - 2)}{6^3}$
= $\frac{3^3(6)}{6^3} = \frac{29}{36} = \frac{3}{4}$

$$\frac{P(B)}{6} = \frac{b}{6} = \frac{1}{36}$$

$$\frac{\text{PCA(1B)} = 3}{6^3} = \frac{1}{12}$$

$$P(B|A) = \frac{P(A\cap B)}{P(A)} = \frac{1}{3}$$

$$= \frac{1}{3x \pi 2} = \frac{1}{3x \pi 2}$$

So, they are not adependent.

#4
$$\frac{1}{C(52,15)} \times (4 \times C(13,15)) = 5108$$

$$\frac{1}{C(52,15)} \times (4 \times C(13,15)) = 2598960$$

superstar plays 5

· 0,05 × 0,0 4 × 0,3 / × X

(0,75 × 0,74 × 0,3'×JC,)+(0,25 × 0,55 × 5C,)

 $\frac{0.05 \times 0.1^{4} \times 0.3}{(0.05 \times 0.1^{4} \times 0.3) + (0.25 \times 0.5^{5})}$