Nishant Jindal

DPP6 (hold)

1) AUROBIND

A I O U

$\longrightarrow$

* Interview Prob. *

$$\frac{8!}{4!}$$

(2) hold

O A I

(3) KanghiProb - 1

$3! \times 5! - 1$

(4) Distr. (hold)

(5)

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Q In HMW 8 different Computers can be distributed among 5 different schools So that each school get atleast one Computer.

1	1	1
1	2	2
1	1	2
1	1	1
4	3	2

8

$$\left\{ \frac{8!}{(1!)^4 \cdot 4!} \times \frac{1}{4!} + \frac{8!}{(1!)^3 2! \, 3!} \times \frac{1}{3!} + \frac{8!}{(2!)^3 (1!)^2} \times \frac{1}{3! \, 2!} \right\} \times \underbrace{5!}_{\text{dist.}}$$

← divide

3 groups
PS 61

Distribution of different into Alike.

1) Proceed as Previous. then make the NOW of distribution equal to 1.

2) here NOW of distribution = NOW of divide × 1

Q IHMW can 7 different toys be arranged in 4 Identical Boxes, so that each box get atleast toy.

1	1	1
1	2	2
1	2	1
4	2	3

7

$$\left\{ \frac{7!}{(1!)^3 4!} \times \frac{1}{3!} + \frac{7!}{(2!)^3 \, 1!} \times \frac{1}{3!} + \frac{7!}{(1!)^2 \, 2! \, 3!} \times \frac{1}{2!} \right\} \times 1$$

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Distribution of A like in different

Beggar's Method

(बाँट में)

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Distribution of Alike in Alike.

सबसे आसान

Just form group & count them.

Q IHMNL 7 Marbles can be put in 4 Identical Boxes, So that Each Box gets at least one Marble.

1	1	1	4
1	2	2	2
2	1	1	3

$7 \rightarrow$ Ans = 3 Ways.

इन्हें गिनिए

Basic Qs of Distribution

Q NOW to form 2 team each containing 2 players.

4 players a, b, c, d

$$\frac{{}^4C_2}{2!} = \frac{\frac{4!}{2!\,2!}}{2!}$$

$$\frac{4!}{(2!)^2} \times \frac{1}{2!}$$

2 बार Repeat

ab	cd
ac	bd
ad	bc
cd	ab
bd	ac
bc	ad

Actual team 3 Ways

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Q. Now in which 30 Jawaans can be divided equally in 3 groups.

$$30 < \begin{matrix} 10 \\ 10 \\ 10 \end{matrix} \Rightarrow \text{Now} = \frac{30!}{10!\,10!\,10!} \times \frac{1}{3!}$$

Q. Now in which 30 Jawaans can be deputed at 3 cities equally in 3 groups.

$$\left\{ \frac{30!}{(10!)^3} \times \frac{1}{3!} \right\} \times 3!$$

{ Pichle Qs me only divide tha Ab distribution hai.

Q. Now in which 200 ppl can be divided into 100 couples. {only divide करना है}

$$200 < \begin{matrix} 2 \\ 2 \\ 2 \\ 2 \\ \vdots \\ 2 \end{matrix} \Bigg\} \quad \text{Now.} \quad \frac{200!}{(2!)^{100}} \times \frac{1}{100!}$$

Q. Adv 2002 6 different books to be distributed b/t R/S/G. So that each child gets atleast 1 Book.

$$6 < \begin{matrix} 1 \\ 1 \\ 4 \end{matrix} \Bigg| \begin{matrix} 1 \\ 2 \\ 3 \end{matrix} \Bigg| \begin{matrix} 2 \\ 2 \\ 2 \end{matrix} \quad \left\{ \frac{6!}{(1!)^2\,4!} \times \frac{1}{2!} + \frac{6!}{1!\,2!\,3!} + \frac{6!}{(2!)^3} \times \frac{1}{3!} \right\} \times 3!$$

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Q For a game in which every pair play with other pair, Six men are available. Find No. of games in which can be played.

$$6 \begin{cases} 2 \\ 2 \\ 2 \end{cases} \quad \left\{ \frac{6!}{(2!)^3} \times \frac{1}{3!} \right\} \times {}^3C_2$$

Q Now in which 8 ppl can be seated in 3 different taxis each having 3 seats for pessengers & duly Numbered when

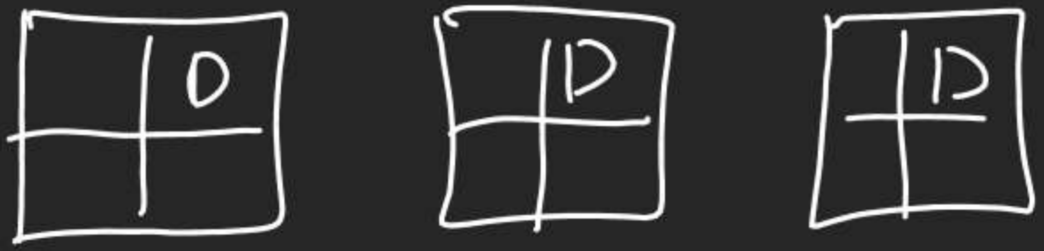
(1) Internal Arrangement also matter.

$${}^9C_8 \times 8!$$

(2) When Internal Arrangement Does not matter.

मतलब matter nahi करता

$$8 \begin{cases} 2 \\ 3 \\ 3 \end{cases} \Rightarrow \left\{ \frac{8!}{2!\,3!\,3!} \times \frac{1}{2!} \right\} \times 3!$$



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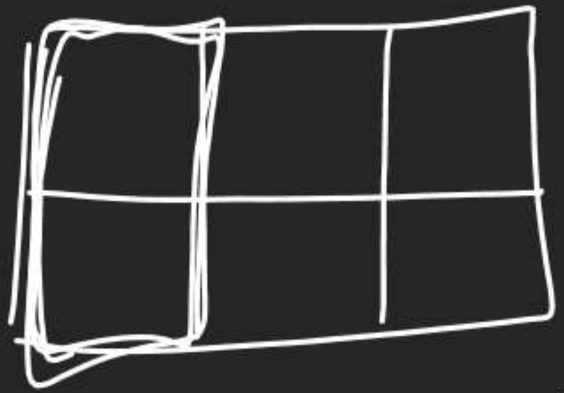
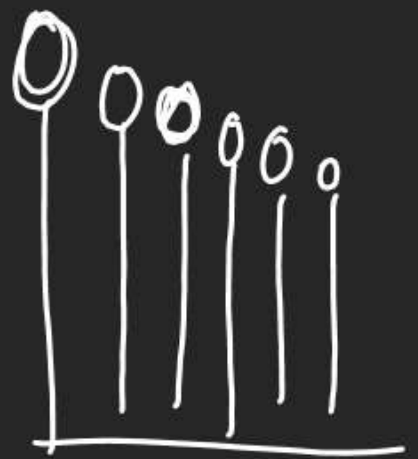
Q In a Jeep there are 3 seats in Front & 3 in Back. Now 6 person of different ht. can be seated so that every one in front is shorter than the person directly behind him.

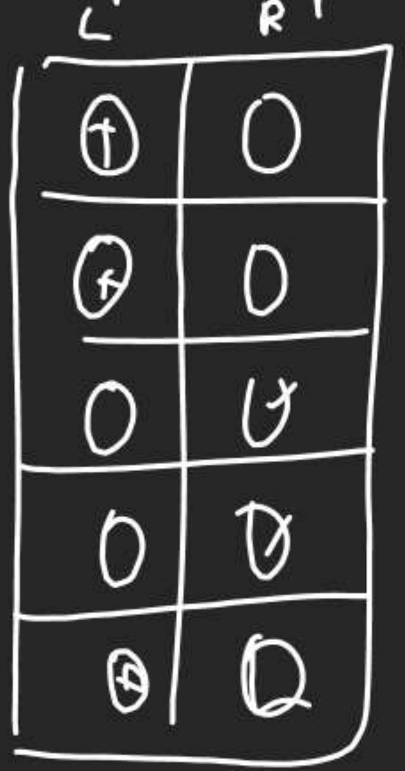
$6 \begin{cases} 2 \\ 2 \\ 2 \end{cases}$





$$\left\{\frac{6!}{(2!)^3}\times\frac{1}{3!}\right\}\times 3!\times 1$$

Q A Rack has 5 pair of shoes, then No of ways in which 4 shoes can be chosen from it so that there is no complete pair.



$$^5C_4\times{}^5C_0+{}^5C_3\times{}^2C_1+{}^5C_2\times{}^3C_2+{}^5C_1\times{}^4C_3+{}^5C_0\times{}^5C_4$$

$= 80$ ways

$$^5C_4\times{}^2C_1\times{}^2C_1\times{}^2C_1\times{}^2C_1 = 80 \text{ ways}$$