Nishant Jindal

Dictionary Prob.

Q How many words can be made using alphabets of SHE without Repeatation

Find Rank of word SHE.

SHE

SHE words = 6 words

Words starting from E _ _ = L2 = 2

H _ _ = L2 = 2

S E H = 5th word

S H E = 6th word

6th Rank

Q HM words can be made using Alphabets of word KING. Find Rank of word KING.

4 x 3 x 2 x 1 = 24 words of Dictionary

Words starting from G _ _ _ = L3 = 6 words

I _ _ _ = L3 = 6 words

K G _ _ = L2 = 2 words

K I G N = 15th word

K I N G = 16th words

Rank = 16th

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Q How many words can be made using alphabets of KNIFE Without Rep. find Rank also?

1) total words

$5 \times 4 \times 3 \times 2 \times 1 = \lfloor 5 = 120$ words

2) Words starting from E _ _ _ _ $= \lfloor 4 = 24$ words

F _ _ _ _ $= \lfloor 4 = 24$ words

I _ _ _ _ $= \lfloor 4 = 24$ words

KE _ _ _ $= \lfloor 3 = 6$ words

KF _ _ _ $= \lfloor 3 = 6$ words

KI _ _ _ $= \lfloor 3 = 6$ words } 90

KNE _ _ $= \lfloor 2 = 2$ words

KNF _ _ $= 2$ words } 4

KNIEE → 95th

KNIFE → 96th Rank.

2nd Method for Intelligent + good digestion value students

Q Rank of KING.

K I N G

2 3 + 1 2 + 1 1 + 1 0

12 + 2 + 1 + 1 = 16th Rank

G 0 0 0

~~I + +~~

~~K 2~~

N 3 2 1

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Q Rank of KNIFE

K N I F E

$3!4 + 3!3 + 2!2 + 1!1 + 1!0$

$= 72 + 18 + 4 + 1 + 1$

$= 96^{th}$ Rank.

Q Rank of MADHAV? $\frac{!5}{!2}$ is NOW of Arr. ADHAV

A M A D H A V

$\frac{2 \cdot 4!5}{!2} + \frac{0!4}{!2} + 1!3 + 1!2 + 0!1 + 1!0$

No of Rep. $240 + 0 + 6 + 2 + 0 + 1$

$= 249$

Q O J A S V I

$3!5 + 2!4 + 0!3 + 1!2 + 1 * !1 + 1!0$

Q Rank of NAAGIN?

N A A G I N

$\frac{4!5}{!2!2} + \frac{0!4}{!2} + 0!3 + 0!2 + 0!1 + 1!0$

$120 + 1 = 121$

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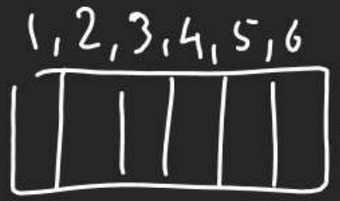
(Arr.)

Q There are 720 Permutations of digits 1, 2, 3, 4, 5, 6. Suppose these Permutations are arranged from smallest to Largest beginning with 1, 2, 3, 4, 5, 6 & ending to 654321.

① No. at 124th Positim.



$= \underline{6} = 720$

No starting from 1 _ _ _ _ _ $= \underline{5} = 120$ Nos

1 _ _ _ _ _ $= \underline{5} = 120$

2 1 3 4 5 6 → 121th No

2 1 3 4 6 5 → 122nd No.

2 1 3 5 4 6 → 123rd

2 1 3 5 6 4 → 124th No

② Positim of 3 2 1 4 5 6?

No starting from 1 _ _ _ _ _ $= \underline{5} = 120$

2 _ _ _ _ _ $= \underline{5} = 120$

3 1 _ _ _ _ $= \underline{4} = 24$

3 2 1 4 5 6 $= 245^{th}$

Positim

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Q HM of the 900 three digits Nos have atleast one even digit?

Atleast One even digit = 900 − None even digit

Total

None even digit

5 × 5 × 5
odd odd odd

= 900 − 125

= 775 (Km se Km ek even digit to hogu hi hoga)

Q No. of Natural No. from 1000 to 9999 (both Inclusive) that do not have any similar digit No.

9 × 10 × 10 × 10

All different

9 × 9 × 8 × 7

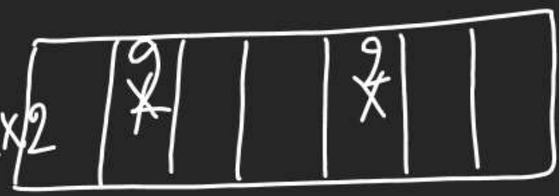
9000 − 4536 Nos

81 × 8 = 648
7
4536

= 4464 Nos must be have 2 or more similar digit

Q No of seven digit No. that can be written using only 3 digits 1, 2, 3 under the Cond^{n} that the digit 2 occurs exactly twice in each No.

$\binom{7}{2} \times 1 \times 2 \times 2 \times 2 \times 2 \times 2$



$32 \times \frac{7.6.5}{1.2.3} = 32 \times 21 = 672$

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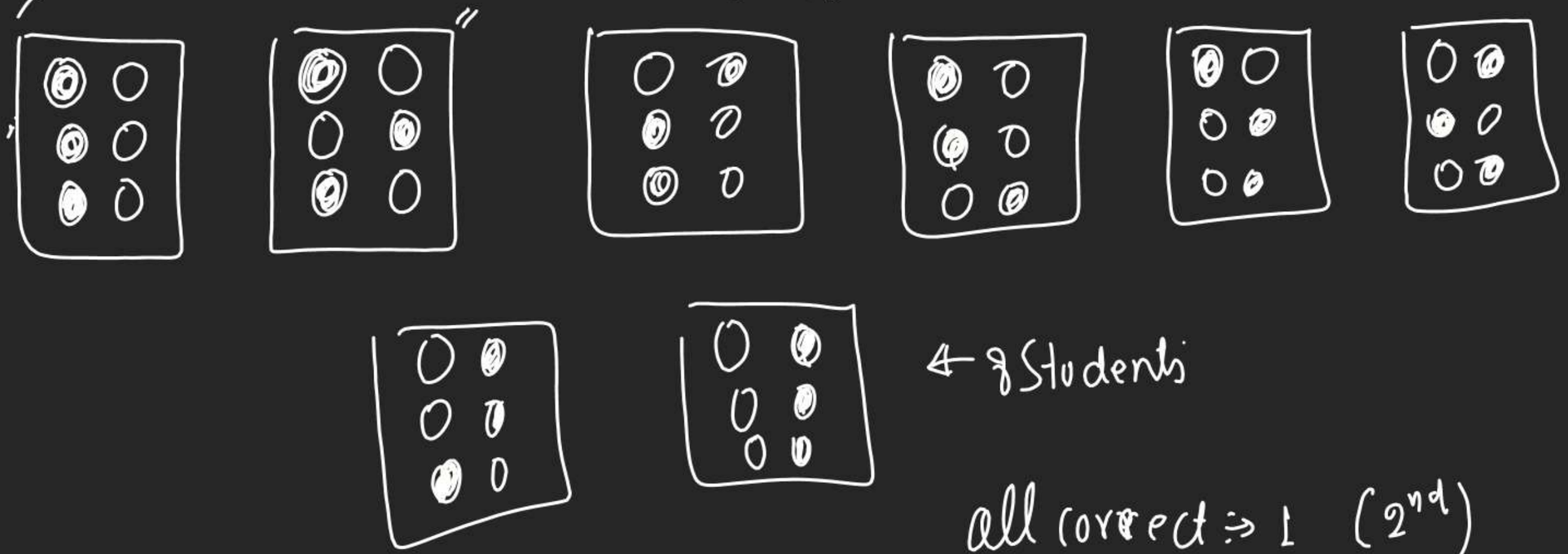
OMR for 3 T/F type Qs. → No of different OMR = ?

$2^3 = 8$



← 8 Students

all correct ⇒ 1 (2^{nd})

all incorrect = 6^{th}

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Q For a Set of 5 T/F types.

No Student has written all Correct answers and no Student has written all same answer. What is strength of class.

all Correct

$2^5 = 32 - 1 = 31$

Nya Set2 discuss.