



SBI Apprentice 2020 की तैयारी

Quantitative Aptitude



Permutation & Combination

(क्रमचय और संचय)

Part-2

2:00 PM





PERMUTATION & COMBINATION

PERMUTATION



ARRANGEMENT

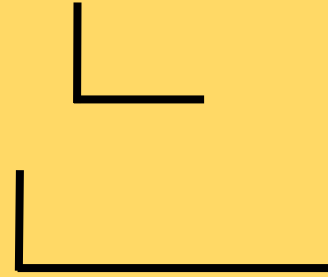
COMBINATION



SELECTION

Total number of permutations of ‘n’ distinct objects, taken ‘r’ at a time is denoted by-

$${}_n\text{P}_r = \frac{n!}{(n-r)!}$$



COROLLARY

$$\diamondsuit {}^n p_1 = n$$

$$\diamondsuit {}^n p_0 = 1$$

$$\diamondsuit {}^n p_n = n!$$

$$\diamondsuit 0! = 1$$

VALUE OF IMPORTANT FACTORIAL

$$0! = 1$$

$$1! = 1$$

$$2! = 2 \times 1 = 2$$

$$3! = 3 \times 2 \times 1 = 6$$

$$4! = 4 \times 3 \times 2 \times 1 = 24$$

$$5! = 5 \times 4 \times 3 \times 2 \times 1 = 120$$

$$6! = 6 \times 5 \times 4 \times 3 \times 2 \times 1 = 720$$

$$7! = 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 = 5040$$

$$8! = 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 = 40320$$



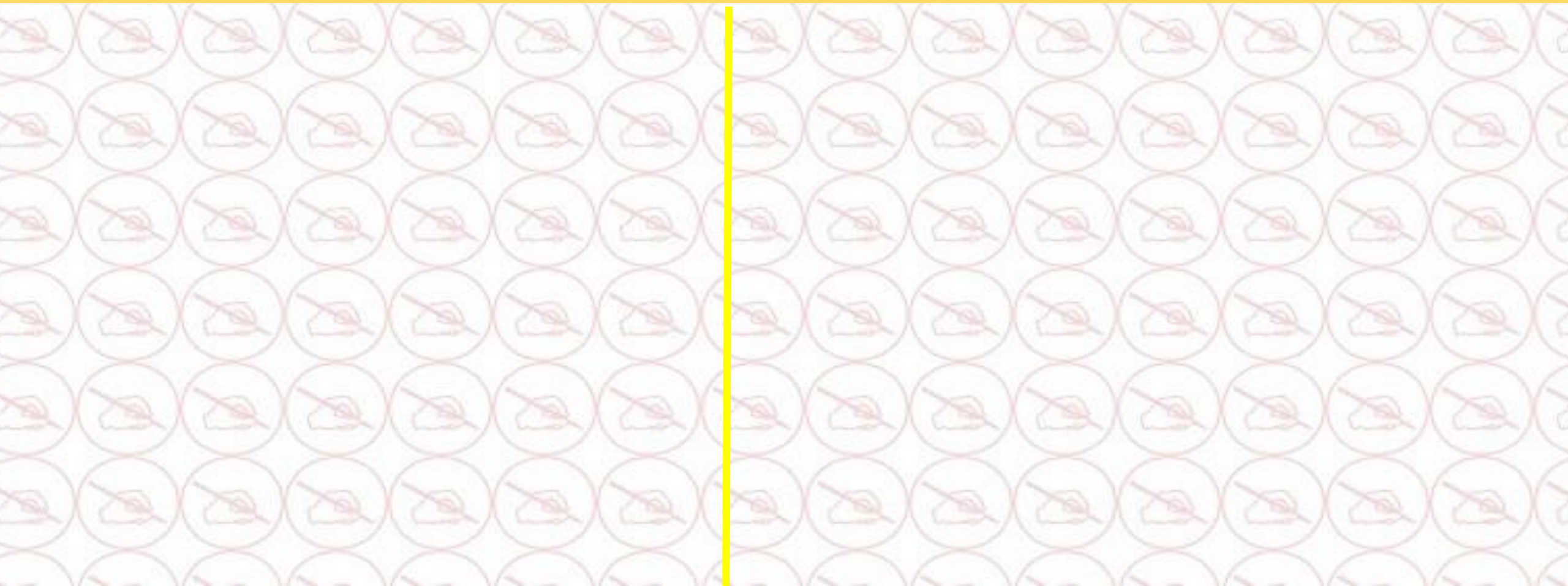
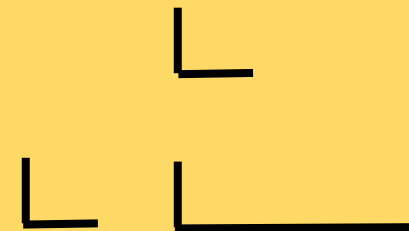
COMBINATION

COMBINATION = SELECTION

The different group or selection which can be made by taking some or all of a number of things are called combination.

The number of all combinations of 'n' things taken 'r' at a time is denoted by-

$${}^n\mathbf{C}_r = \frac{n}{r \cdot n-r}$$



COROLLARY

(i) ${}^n\mathbf{C}_0 = 1$

(ii) ${}^n\mathbf{C}_1 = n$

(iii) ${}^n\mathbf{C}_n = 1$

$${}^n\mathbf{C}_r = {}^n\mathbf{C}_{n-r}$$

$${}^{14}\mathbf{C}_{12} = {}^{14}\mathbf{C}_{14-12}$$

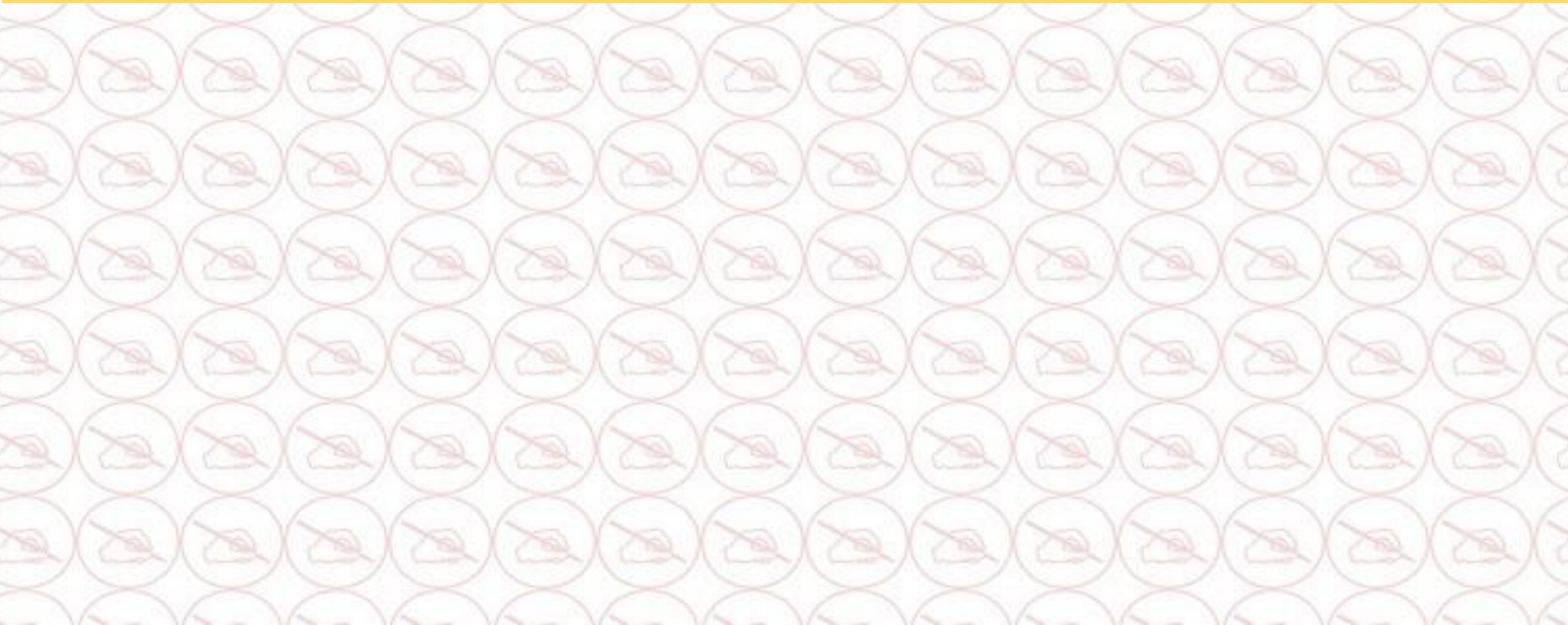
$$= {}^{14}\mathbf{C}_2$$

$$= \frac{14 \times 13}{2 \times 1}$$

$$= 91$$

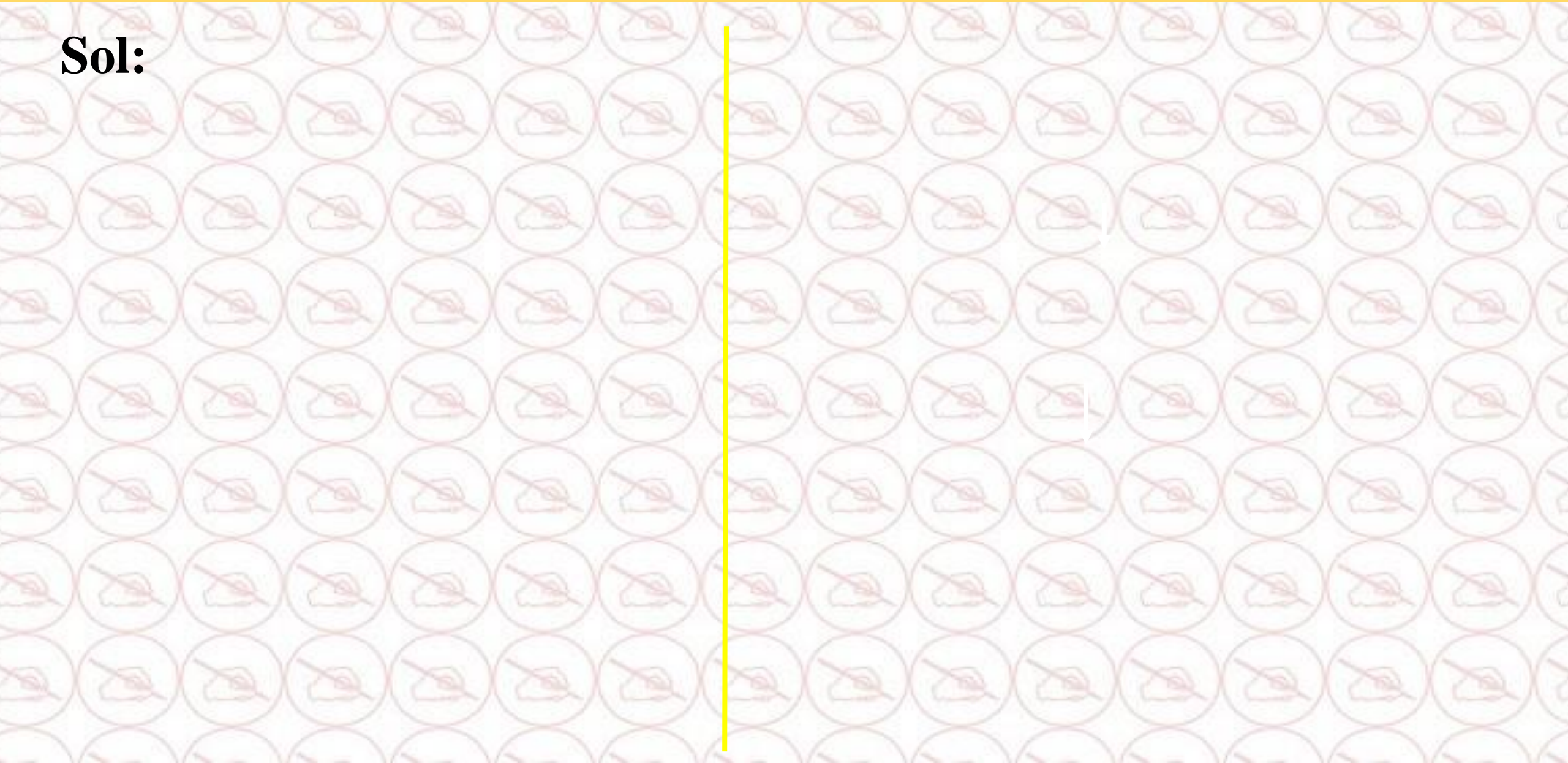
Ex: There are 10 people in a party. If each one shakes hand with the other exactly once. Find the total number of hand shakes?

एक पार्टी में 10 लोग होते हैं। अगर हर एक एक बार दूसरे के साथ हाथ मिलाता है। हाथ मिलाने की कुल संख्या ज्ञात कीजिये?



Ex: If number of Hand shakes = 66, Find number of people?

Sol:



Ex: Out of 17 players, there are 5 bowlers. Find the number of ways of selecting a team of 11 players which has 2 bowlers.

Sol:

Ex: A committee of 3 members is to be formed out of 5 males and 4 females . Find how many committees can be formed consisting of-
(i) 2 Male and 1 female in the committee.

Sol:

Ex: A committee of 3 members is to be formed out of 5 males and 4 females. Find how many committees can be formed consisting of-
(ii) None female in the committee

Sol:

Ex: A committee of 3 members is to be formed out of 5 males and 4 females . Find how many committees can be formed consisting of- (iii) At least 1 female in the committee.

