Formula Sheet On Average
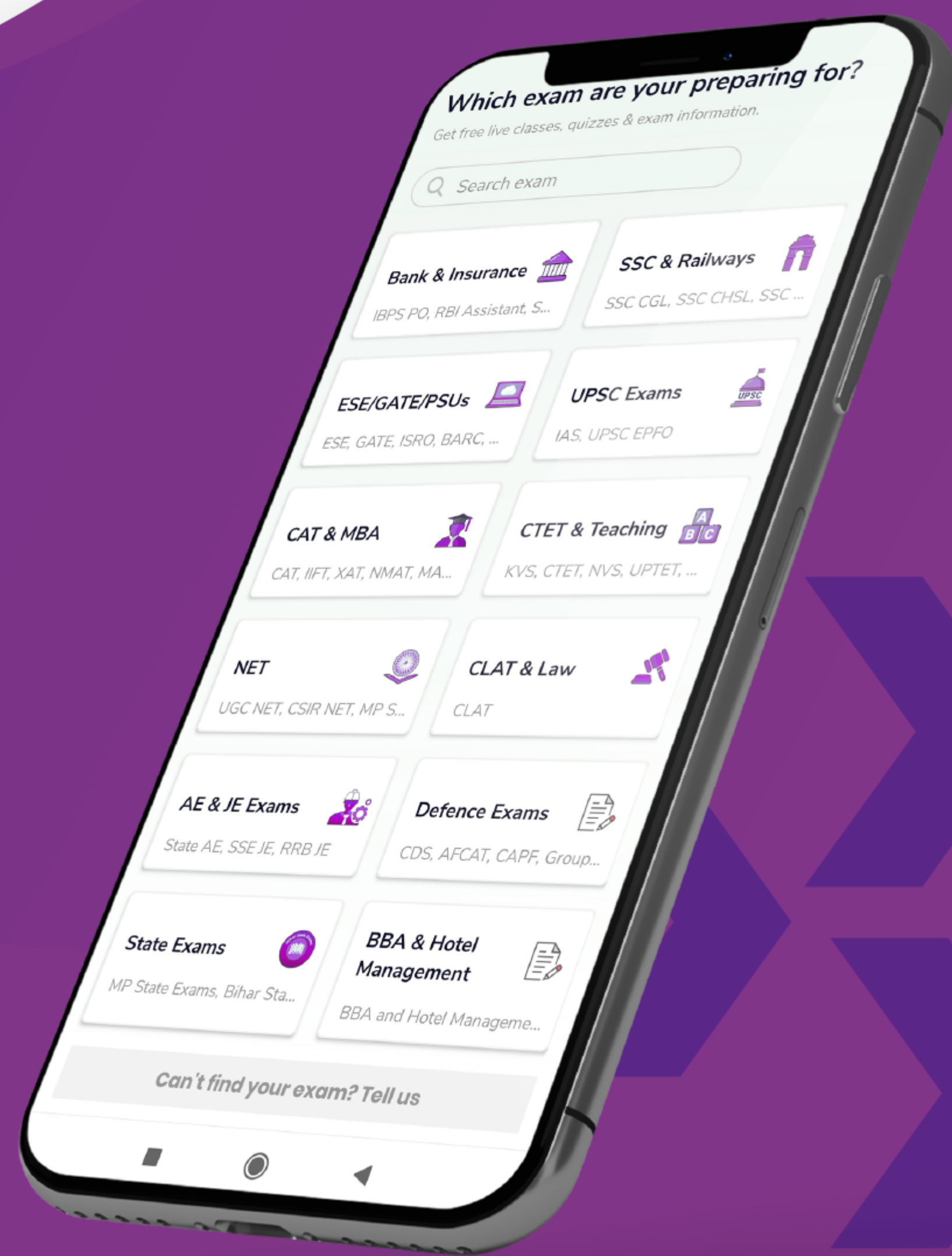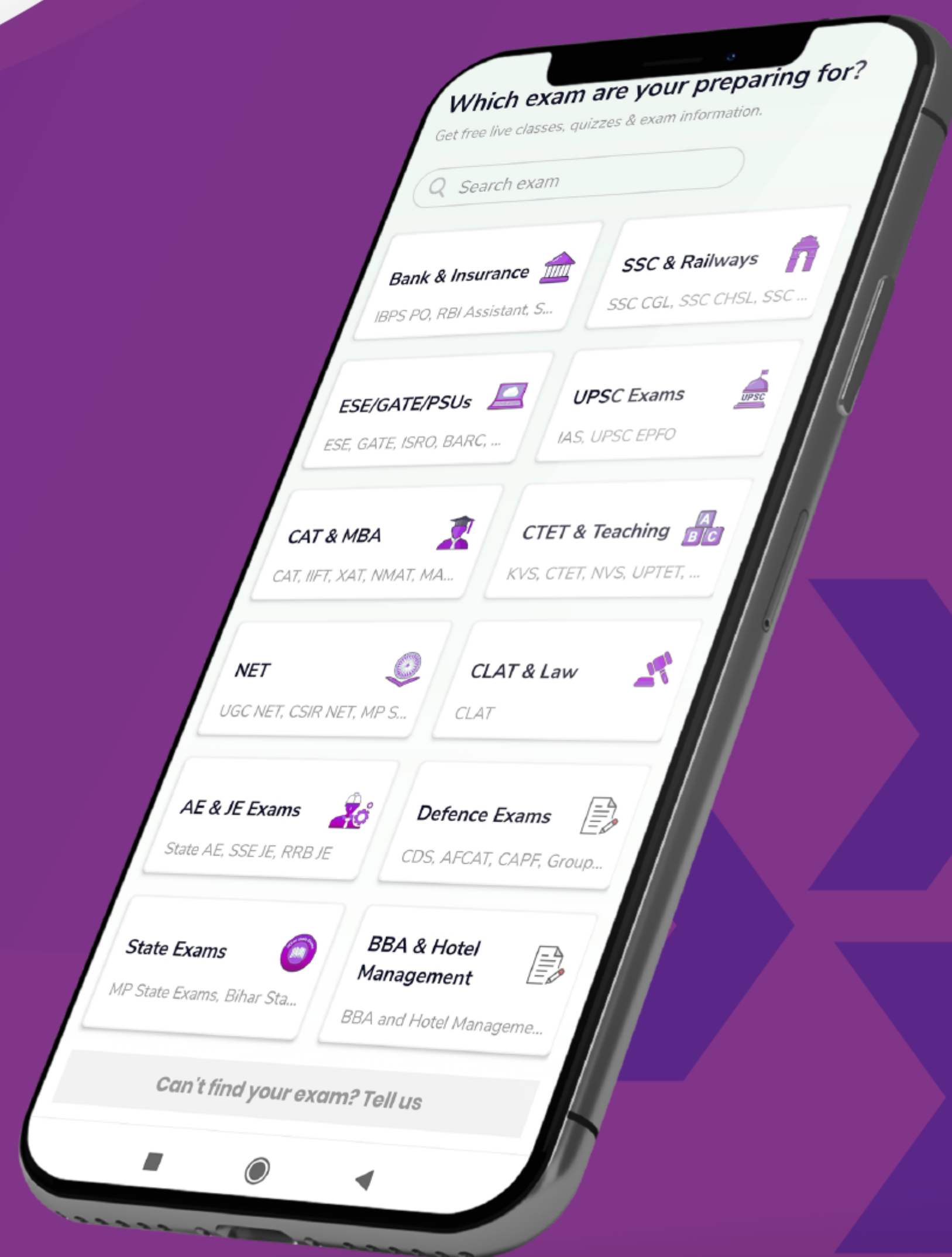
Main Formula

$$\text{Average} = \frac{\text{Sum of all term(s)}}{\text{No. of term(N)}}$$

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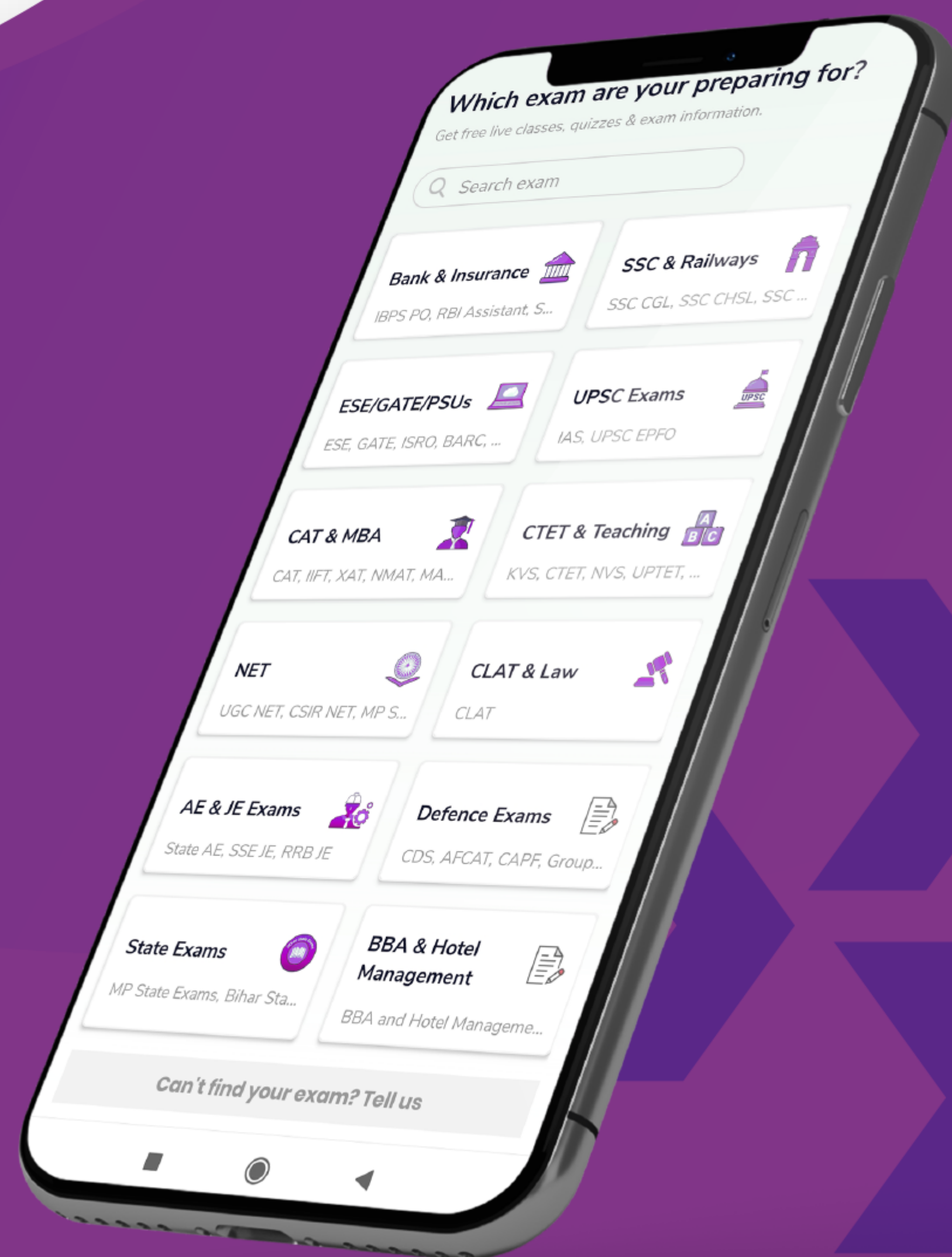| State Exams | BBA & Hotel Management |
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Basic Formula

1. Average of first **n** natural numbers = (n+1) / 2

2. Sum of first **n** natural numbers = $\dfrac{n(n+1)}{2}$

3. Average of squares of first **n** natural numbers = (n+1) (2n+1) / 6

4. Average of cubes of first **n** natural numbers = n (n+1)2 / 4

5. Average of first n even numbers = n + 1

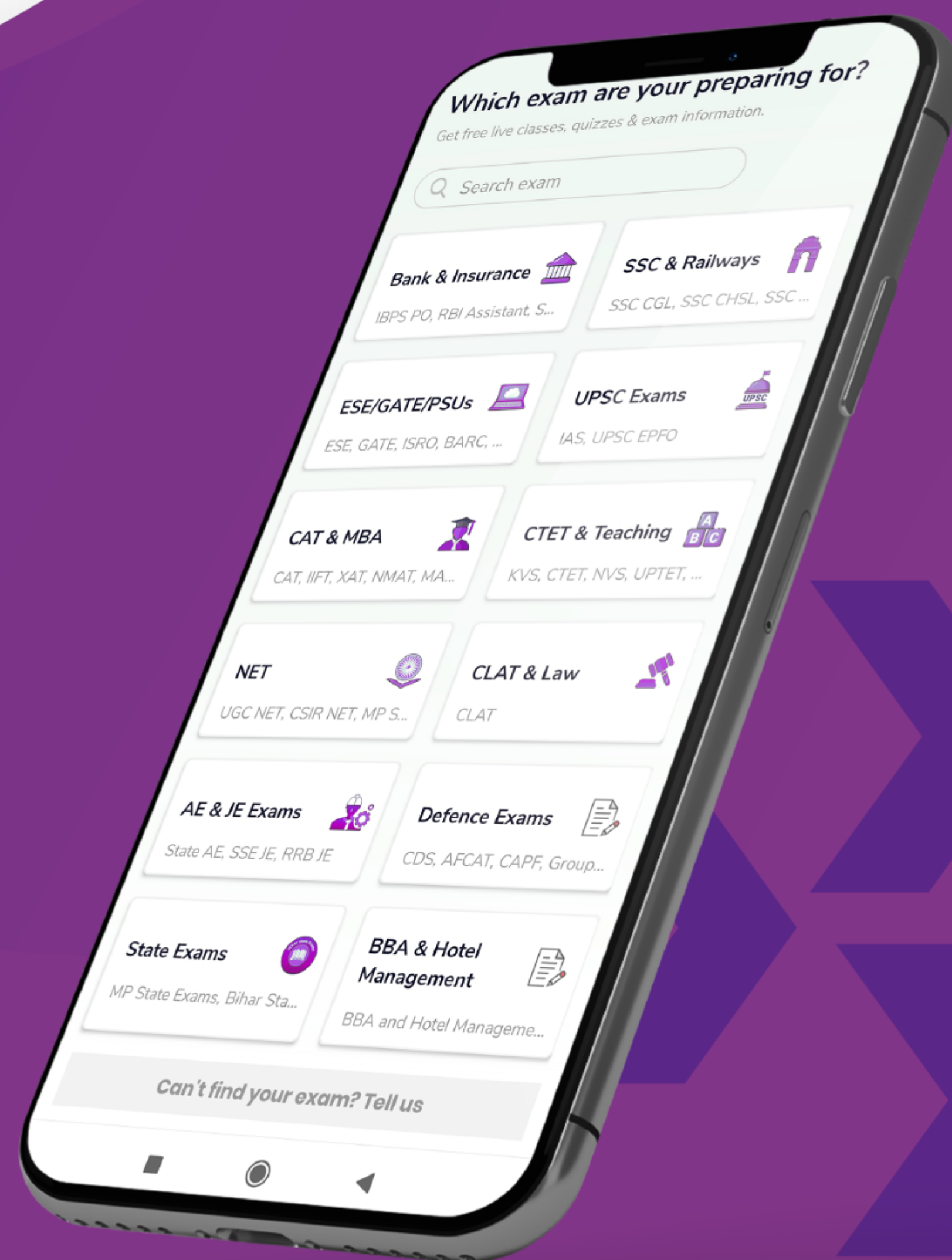https://byjusexamprep.com/

6.Sum of first **n** even numbers = n(n +1)

7.Average of squares of first **n** even numbers = 2 (n+1) (2n+1) / 3

8.Average of cube of first **n** even numbers = 2n (n+1)2

9.Average of first **n** odd numbers = n

10.Sum of first **n** odd numbers = n^2

11. Average of squares of first **n** odd numbers = (2n+1) (2n-1) / 3

12. Average of cube of first **n** odd numbers = n(2n2 – 1)

13. Average of **n** consecutive numbers = (First number + Last number)/2

14. The average of **n** consecutive numbers is always the middle term of all the numbers when **n** is an odd number. And when **n** is an even number, the average of all consecutive numbers is always the mean of two middle terms.
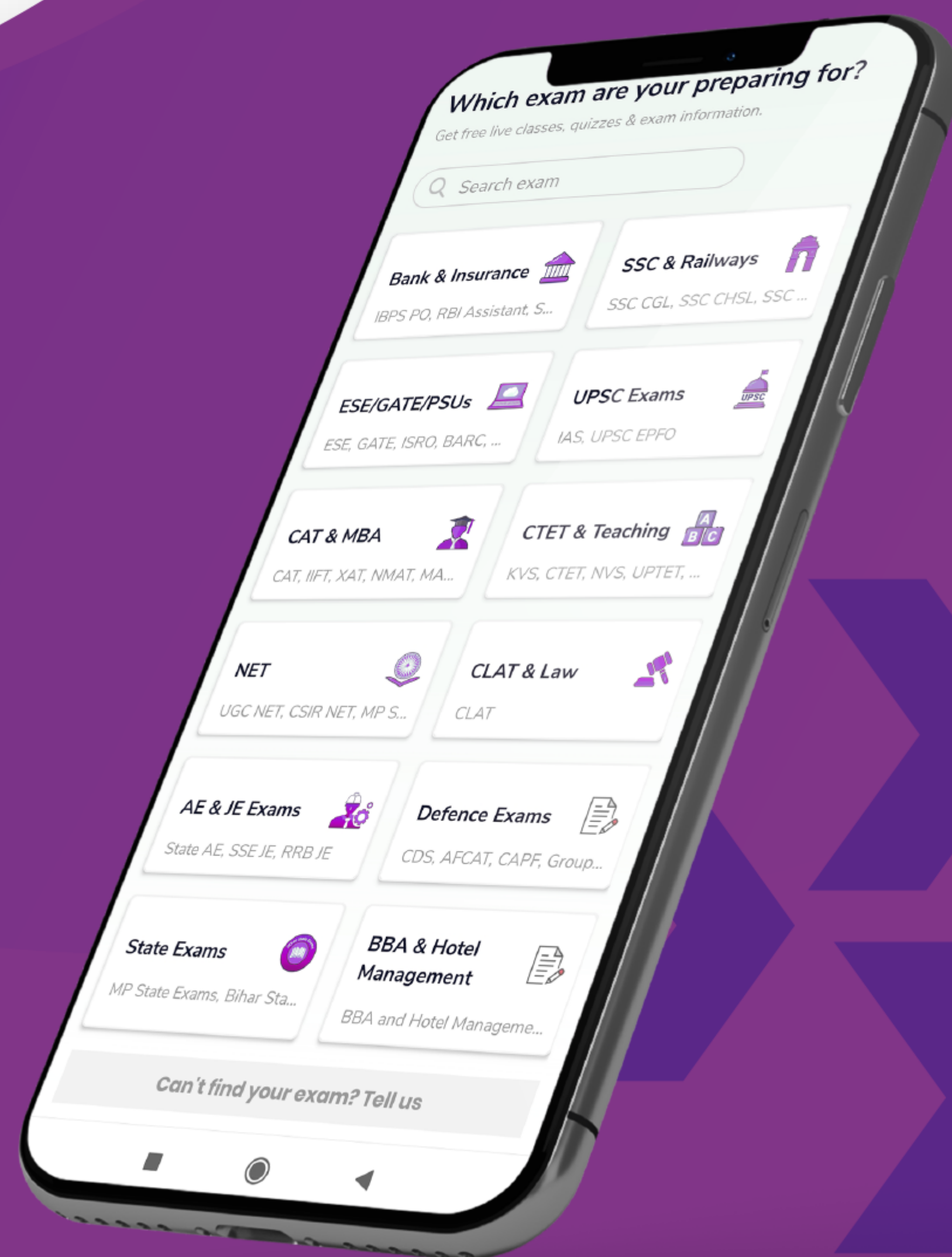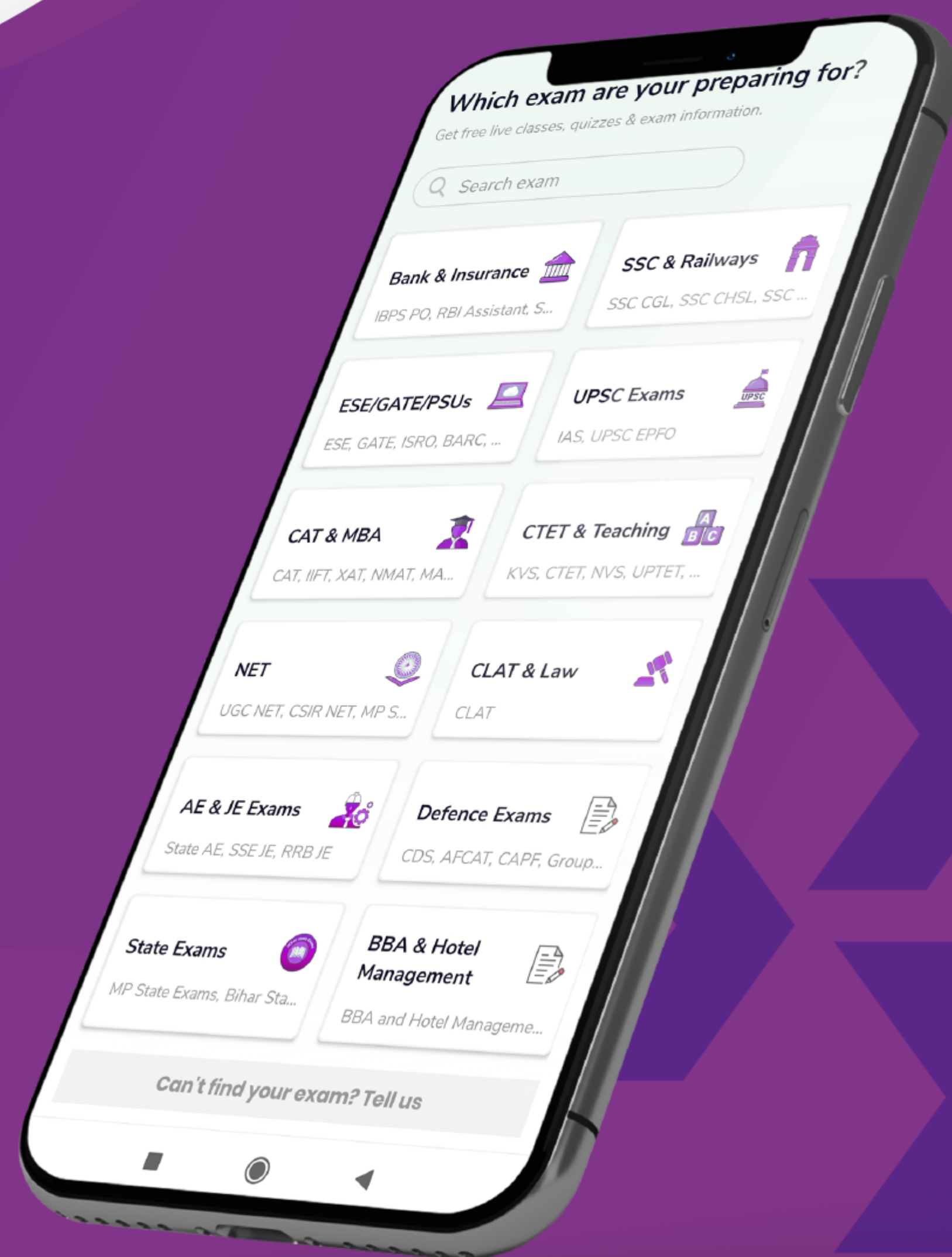
Points To Remember

1. The average of given observations always lies between the value of highest term and the value of lowest term.

2. If the value of each number is divided by the same value "a", then the average of all given numbers will also get divided by "a".

3. If the value of each number is multiplied by the same value "a", then the average of all numbers will also get multiplied by "a".
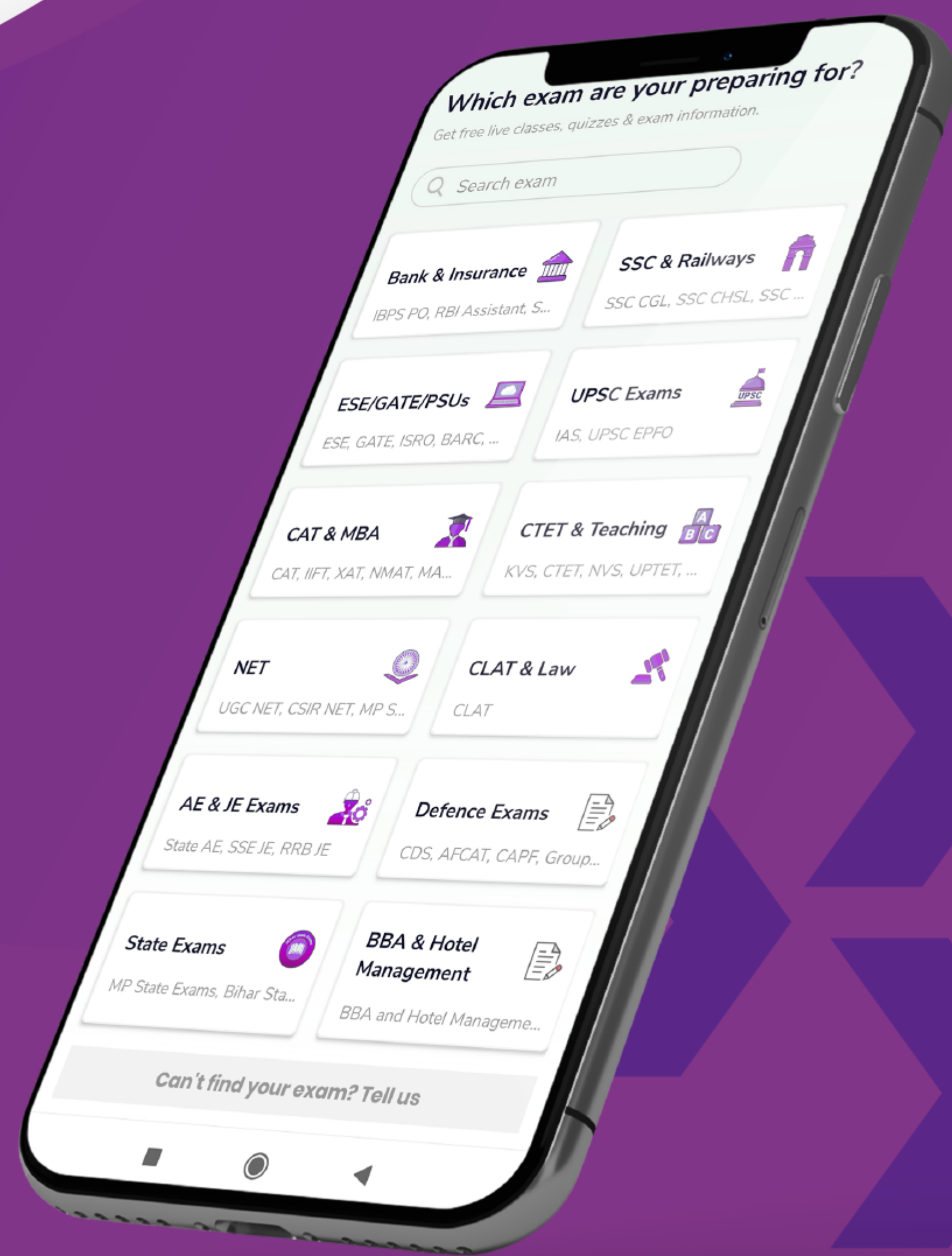
4. If the value of each number is decrease by the same value "a", then the average of all numbers will also get decrease by "a".

5. If the value of each number is increase by the same value "a", then the average of all numbers will also get increase by "a".

Some Direct Formula

1. If the average of "x" numbers is "p" and that of "y" numbers is "q", then

the average of (x + y) numbers $= \dfrac{xp + yq}{x + y}$

2. If the average of "x" numbers is "p" and that of "y" numbers taken out

of "x" numbers is "q", then the average of rest of the numbers $= \dfrac{xp - yq}{x - y}$

3. If the average of "n" quantities is equal to "p" when a particular quantity

is removed, the average becomes "q". Then the value of quantity removed

is = **[n (p - q) + q]**

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