Chapter 3 Class 6 Ganita Prakash - Number Play - Mix Questions Worksheet 1 by teachoo

Chapter: Chapter 3 Class 6 Ganita Prakash - Number Play

Name: _____

School: _____

Roll Number: _____

2-Mark Questions

1 A team of five drone operators (A, B, C, D, E) are flying their drones in a line. Their drone altitudes are: $A = 160$ m, $B = 175$ m, $C = 155$ m, $D = 180$ m, $E = 170$ m. They are in the formation: D, B, E, A, C. Calculate the "Taller Neighbour" score for each operator's drone.

2 A security system generates a temporary 4 -digit PIN from the digits {9,0,3,5}. It then encrypts the PIN by applying one round of the Kaprekar process. What is the first encrypted PIN generated?

3 Your smart watch displays the time as 12: 21. You know this is a palindromic time. To save battery, the display only turns on at palindromic times. How many minutes will you have to wait until it turns on again?

4 A programmer is building a tool for the Kaprekar process. They need to include error handling. Explain why the program must reject an input like 7777 .

5 A computer simulation models population decay using the Collatz sequence. If the starting population is 18 units, trace the population size at each step until it reaches 1.

6 A landscape architect is placing four unique sculptures in a 2×2 square garden. Is it possible to arrange them such that no single sculpture is taller than all of its adjacent neighbours (i.e., there are zero supercells)? Justify with a diagram and heights.

7 A company uses 5 -digit palindromic serial numbers for a special edition product, using only the digits {1,0,8} due to their visual symmetry. What are the smallest and largest possible serial numbers they can create?

3-Mark Questions

8. A choreographer is arranging five dancers of different heights in a line. They want to create a visual "dip" in the middle. The goal is to achieve a "Taller Neighbour" score sequence of 0,1,2,1,0. Draw a simple bar chart representing the relative heights of the dancers to show how this is achieved.

9. A stock market analyst tracks a portfolio of 7 tech stocks in a list. Their daily gains are $[+34, +56, +45, +89, +90, +78, +65]$. A stock is an "outperformer" (supercell) if its gain is higher than the stocks listed immediately next to it.
a) Identify the "outperformers".

b) To rebalance the portfolio visuals, the analyst can swap the positions of two stocks. Which single swap would create the maximum number of "outperformers"?

10. The number 196 is a famous Lychrel number candidate, meaning the reverse-and-add process is suspected to never form a palindrome. In cryptography, such sequences are explored for creating non-repeating keys. Perform the first three steps of the process on 196 to show how the resulting numbers expand.

Important links

- Answer of this worksheet - https://www.teachoo.com/25638/5398/Mix-Questions---Worksheet-1/category/Teachoo-Questions---Mix/
- Full Chapter with Explanation, Activity, Worksheets and more – https://www.teachoo.com/subjects/cbse-maths/class-6/chapter-3-ganit-prakash/
- Curiosity Class 6 (Science) - https://www.teachoo.com/subjects/science/class-6/
- Ganita Prakash Class 6 (Maths) - https://www.teachoo.com/subjects/cbse-maths/class-11th/

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