Chapter 3 Class 6 Ganita Prakash – Number Play - Case Based Question Worksheet 1
by *teachoo*

Chapter: **Chapter 3 Class 6 Ganita Prakash - Number Play**

Name: _____

School: _____

Roll Number: _____

Case 1: The Smart City Traffic Grid

A smart city uses a 3 × 3 grid of sensors to monitor traffic density. The number in each cell represents the number of cars per minute. A cell is marked as a "Congestion Hotspot" (a supercell) if its car count is higher than all its immediate neighbours (top, bottom, left, right).

The grid at 5 PM is shown below:

150	180	160
210	250	190
170	220	200

1   (1 mark) Which cell in the grid, identified by its value, is a "Congestion Hotspot"?

2   (1 mark) What is the traffic count of the southern neighbour of the hotspot cell?

3   (1 mark) Is the cell with the value 220 a hotspot? Answer Yes/No.

4 (2 marks) Explain why the cell with the value 250 is a hotspot by listing its four neighbours and comparing their values to 250 .

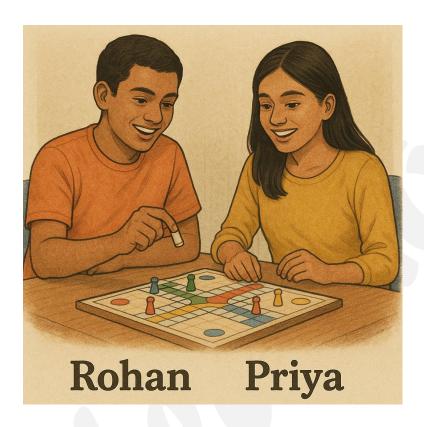## Case 2: The Archaeologist's Code

An archaeologist finds a tablet detailing an ancient encryption method. The process, which they name the "Kaprekar Scramble," works on 4digit keys. The tablet shows the key 3087 was scrambled.

1 (1 mark) To begin the scramble of key 3087 , what is the largest number that can be formed from its digits?

2 (1 mark) What is the smallest number that can be formed from the digits of 3087 ?

3 (1 mark) What is the stable "magic number" that the 4-digit Kaprekar Scramble always converges to?

4 (2 marks) Calculate the result of the first round of the Kaprekar Scramble on the key 3087 by performing the correct subtraction.

Case 3: The Palindrome Game

Rohan   Priya

Two friends, Rohan and Priya, are playing a game. They start with a 2-digit number, then take turns applying the reverse-and-add process. The player whose turn results in a palindrome wins. They start with the number 59.

1 (1 mark) What is the number 59 when its digits are reversed?

2 (1 mark) Rohan goes first. What is the sum of 59 and its reverse?

3 (1 mark) Is the result of Rohan's turn a palindrome? Answer Yes/No.

4 (2 marks) Starting with Rohan's result, show the calculation for Priya's turn and state the final palindromic number that is eventually reached in the game.

Important links

- Answer of this worksheet - https://www.teachoo.com/25642/5400/Case-Based-Questions---Worksheet-1/category/Teachoo-Questions---Case-Based/

- 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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