



1. What is the result when we subtract the smallest 4-digit number (formed by rearranging digits) from the largest one using digits of a 4-digit number (with at least two different digits)?

- 2. Which of the following is known as Kaprekar's Constant?**

- ### 3. Who discovered the constant 6174?

4. The Kaprekar process always ends at 6174 for any 4-digit number (with at least two different digits) in how many steps (maximum)?

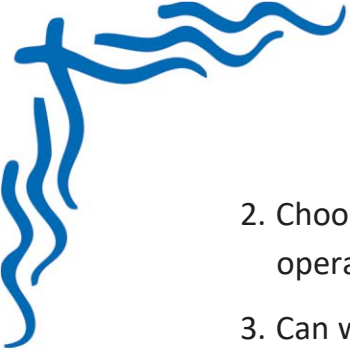
5. When 7641 is arranged in descending and ascending order and then subtracted, what is the result after one step?

- B. Write the Missing Terms to Complete the Sentences:**

1. The number _____ is called Kaprekar's Constant.
2. The process of forming the largest and smallest numbers using the same digits and subtracting them is called _____ process.
3. The Kaprekar process is repeated until we reach the number _____.
4. The Kaprekar number for 3–digit numbers is _____.
5. In the Kaprekar process, all digits of the number must not be _____.

C. Figure out the answers to these questions:

1. Rearrange the digits of 8531 in descending and ascending order and perform the Kaprekar operation. Repeat the process until you reach 6174. Show each step.



2. Choose a 4-digit number (all digits not the same) and perform the Kaprekar operation until you reach 6174. How many steps did it take?
3. Can we apply the Kaprekar process to numbers like 1111 or 2222? Explain with reasoning.
4. Using the number 4321, perform the Kaprekar process and list the results of each step until the magic number is reached.
5. Why does the Kaprekar process not work for numbers where all four digits are the same?
6. Create a flowchart showing the steps of the Kaprekar process for a 4-digit number.
7. Design a riddle or puzzle using the number 6174 as the solution. Try it out on a friend.
8. Find two different 4-digit numbers (with different digits) which both reach 6174 in exactly three steps.

D. Mark each sentence with a True (✓) or False (X):

1. Kaprekar's constant is 6174.
2. The Kaprekar process can be applied to 4-digit numbers only.
3. All numbers eventually reach 6174 using Kaprekar's process.
4. The number 1111 is a valid number to use for the Kaprekar process.
5. Kaprekar was an Indian mathematician.

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E. Challenge yourself with these questions:

1. Find any 4-digit number that reaches 6174 in exactly four steps using the Kaprekar process.
2. Explain the difference between 3-digit and 4-digit Kaprekar constants.
3. Research and write a short paragraph on D. R. Kaprekar and his contributions to mathematics.
4. Create a game board or card activity that teaches the Kaprekar process to your classmates.
5. List 5 different numbers that reach 6174 in two steps. Show calculations for each.