Chapter 3 Class 6 Ganita Prakash - Number Play - Assertion and Reasoning Worksheet 1 by teachoo

Chapter: Chapter 3 Class 6 Ganita Prakash - Number Play

Name: _____

School: _____

Roll Number: _____

Instructions:

For each question, two statements are given: Assertion (A) and Reason (R). Choose the correct option.

(a) Both A and R are true, and R is the correct explanation of A.

(b) Both A and R are true, but R is not the correct explanation of A.

(c) A is true, but R is false.

(d) A is false, but R is true.

1. **Assertion (A):** In a line of people with distinct heights, if a person has a "Taller Neighbour" score of 2 , they must be standing between two taller people.
   Reason (R): A score of 2 requires two neighbours, both of whom must be taller. A person at an end has only one neighbour.

2. **Assertion (A):** In a data scrambling algorithm using the Kaprekar process, the input 9871 will converge to 6174 in fewer steps than the input 2111.
   Reason (R): Numbers with more distinct and widely spread digits tend to produce larger differences in the subtraction step, accelerating convergence.

3. **Assertion (A):** When creating a 3×3 heat map with unique values from 1 to 9 , the cell with value 1 can never be a "hot spot" (supercell).
   Reason (R): A hot spot must have a value strictly greater than all its neighbours, and 1 is the minimum possible value.

4. **Assertion (A):** In a simulation of particle decay that follows the Collatz rule, a particle with a starting mass that is a power of 2 (e.g., 2^n) will decay to 1 through a series of even-mass steps.
   Reason (R): Dividing an even number by 2 results in an odd number only when the number is 2 itself.

5. **Assertion (A):** A company uses 3-digit product codes where the digits are always consecutive (e.g., 234, 678). A quality check that sums the digits will always find the sum is a multiple of 3 .

Reason (R): The sum of three consecutive integers can be expressed as $(x-1)+x+(x+1)=3x$, which is mathematically always a multiple of 3 .

Important links

- Answer of this worksheet -https://www.teachoo.com/25640/5399/Assertion-Reasoning---Worksheet-1/category/Teachoo-Questions---Assertion-Reasoning/
- Full Chapter with Explanation, Activity, Worksheets and more – https://www.teachoo.com/subjects/cbse-maths/class-6/chapter-3-ganit-prakash/
- Ganita Prakash Class 6 (Maths) - https://www.teachoo.com/subjects/cbse-maths/class-11th/

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