LEARNING AS ONE NATION
Expanded Project
L E A R N I N G A C T I V I T Y

Math 10_12

Name: _____ **Grade/Score:** _____
Year and Section: _____ **Date:** _____

Subject *(Check or choose from below.)* _____

- ☐ Religion/Values Education
- ☐ Natural Sciences
- ☐ Araling Panlipunan
- ☐ Filipino
- ☐ English
- ☐ Math
- ☐ TLE / ICT
- ☐ MAPEH

Type of Activity *(Check or choose from below.)*_____

- ☐ Concept Notes
- ☐ Skills: Exercise / Drill
- ☐ Laboratory Report
- ☐ Illustration
- ☐ Formal Theme
- ☐ Informal Theme
- ☐ Others: _____

Activity Title:	Infinite Geometric Sequences
Learning Target:	To distinguish between convergent and divergent infinite geometric sequences.
References: *(Author, Title, Pages)*	M. J. Acelajado, et al., Algebra, p. 418-419 V. G. Baja and M. V. Bernido, CVIF Learning Activities

An infinite geometric sequence is a sequence whose number of terms increases with no limit. It has an infinite number of terms.

Types of infinite geometric sequence:

- **Convergent Sequence** – when the absolute value of the common ratio is less than 1 $(|r| < 1)$
- **Divergent Sequence** – when the absolute value of the common ratio is greater than or equal to 1 $(|r| \geq 1)$

Exercises:

Identify whether the given sequence is convergent or divergent. Write **CS** if it is a convergent sequence and write **DS** if it is a divergent sequence.

a) $1,\ 3,\ 9,\ 27, \ldots$ _____

b) $2,\ -4,\ 8,\ -16, \ldots$ _____

c) $6,\ 1,\ \frac{1}{6},\ \frac{1}{36}, \ldots$ _____

d) $-108,\ 36,\ -12,\ 4, \ldots$ _____