

## Arithmetic and Geometric Sequences – Lesson #2

MCR3U

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### Sequences Questions

What is the difference between a sequence and a series?

What is the difference between Arithmetic and Geometric?

### Formulas for general terms of a sequence

**Example 1:**  $-10, -4, 2, \dots$

a) Determine whether the sequence is arithmetic or geometric.

b) Determine an equation for the sequence.

c) Find the value of  $t_{21}$

**Example 2:** Insert two numbers between 8 and 32 so the four numbers form an arithmetic sequence.

**Example 3:** An arithmetic sequence is 8, 14, 20, 26, ... Which term has the value 92? Prove mathematically.

**Example 4:** 200, -100, 50, ...

a) Is the sequence arithmetic or geometric?

b) Find an equation to represent the sequence.

c) Find  $t_{14}$

**Example 5:** Complete the geometric sequence

\_\_\_\_, 160, \_\_\_\_, \_\_\_\_, \_\_\_\_, 10

**Example 6:** The 50th term of an arithmetic sequence is 238 and the 93rd term is 539. Find a general equation to represent the sequence.

**Example 7:** Determine the number of terms in the geometric sequence: 5, -10, 20, ....., -10 240