U7D5 MCR 3UI **Geometric Series**

A geometric series is the _____ of the terms of a geometric sequence.

If the sequence is $t_1,\ t_2,\ t_3,\ t_4 \ldots\ldots t_n$ then the series is

$s_1,\ s_2,\ s_3,\ s_4 \ldots\ldots s_n$ where :

$$s_1 = t_1 = a$$
$$s_2 = t_1 + t_2 = a + ar$$
$$s_3 = t_1 + t_2 + t_3 = a + ar + ar^2$$
$$s_4 = t_1 + t_2 + t_3 + t_4 = a + ar + ar^2 + ar^3$$
$$\ldots\ldots$$

In general

$$s_n = \frac{a(r^n - 1)}{r - 1} \quad , r \neq 1$$

a is

r is

n is

Examples:

1. Find the sum of the first 10 terms of 5, 10, 20, 40, . . .
2. Find the sum of - 4 + 12 – 36 + . . . + 972.

Summary : Formula List

General Term	**Geometric Sequence**
	Arithmetic Sequence
Series	**Arithmetic**
	Arithmetic (alternate version)
	Geometric

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