

**Notes!!! Geometric Sequences**

Geometric sequences are found by multiplying the previous term by a constant.

In general we use this form:

$$a_n = \{a, ar, ar^2, ar^3, \dots\}$$

Where  $r$  is the common ratio

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**Notes!!! Common Ratio**

Common ratio is the amount that a geometric sequence is multiplied by each time.

Formulaically we can find  $r$  with this:

$$r = \frac{a_n}{a_{n-1}}$$

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**Do you see it now?**

Given the geometric sequence:

$$a_n = \{4, 12, 36, 108, \dots\} \quad \text{where } r = 3$$

Then

$$a_n = \{4, 4(3), 4(9), 4(27), \dots\}$$

$$a_n = \{a, ar, ar^2, ar^3, \dots\}$$

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**Notes!!! Geometric Sequences**

$$a_n = \{a, ar, ar^2, ar^3, \dots\}$$

$a$  = first term

$r$  = common ratio

Explicit Formula:

$$a_n = a_1 \cdot r^{n-1}$$

$$a_n = 4(3)^{n-1}$$

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