

10-3A Geometric Sequences

- *students will use and find terms of a geometric sequence*
- *A.SSE.4*

definition of a geometric sequence: a sequence in which each term after the first is found by multiplying the previous term by a constant called the common ratio.

common ratio (r): divide any term by the previous term.

n th term of a geometric sequence: the n^{th} term, a_n , of a geometric sequence with first term a_1 and common ratio r is given by the formula:

$$a_n = a_{n-1}r \quad \text{or} \quad a_n = a_1r^{n-1}$$

geometric mean(s): the missing term(s) between two nonconsecutive terms in a geometric sequence.

Examples

Find the n th term of the geometric sequence.

1. $a_4 = 10, n = 5, r = \frac{1}{2}$

2. $a_6 = 729, n = 9, r = 3$

3. Find the 3 geometric means between 3.12 and 49.92.