

Name: _____

Date: _____

GEOMETRIC SEQUENCES
COMMON CORE ALGEBRA I HOMEWORK

FLUENCY

1. For each of the following geometric sequences, fill in the missing two terms and identify the common ratio, r . Remember, you can always find r by dividing two consecutive terms such as $\frac{a_2}{a_1}$.

(a) 2, 10, 50, _____, _____

$r =$ _____

(b) 4, -8, 16, _____, _____

$r =$ _____

(c) 40, 20, 10, _____, _____

$r =$ _____

(d) 81, 54, 36, _____, _____

$r =$ _____

(e) 5, -5, 5, _____, _____

$r =$ _____

(f) 8, 20, 50, _____, _____

$r =$ _____

2. One of the following sequences is arithmetic and one is geometric. Explain which is which.

Sequence #1: 5, 15, 45, 135, 405

Sequence #2: 5, 15, 25, 35, 45

3. In a geometric sequence the first term is 5 and the second term is 20, which of the following is the fifth term?

(1) 65

(3) 80

(2) 1,280

(4) 5,120



4. A geometric sequence is defined recursively by $a(1) = 40$ and $a(n) = a(n-1) \cdot \frac{1}{2}$.
- (a) Write out the first four terms of this sequence. (b) Is the 9th term of this sequence larger or smaller than $\frac{1}{10}$? Show the calculation that you use to determine your answer.
5. Which has the larger 15th term when comparing the arithmetic and geometric sequences below? Show evidence that supports your answer.

Arithmetic Sequence: 150, 650, 1150, 1650, ...

Geometric Sequence: 4, 12, 36, 108, ...

APPLICATIONS

6. Maria plans to double the amount of time she spends walking per day each week. She starts, on week 1, walking 5 minutes per day. After 7 days, she then walks 10 minutes per day, etcetera.

(a) How many minutes per day will Maria be walking on Week #6? Show the calculation that gives your answer.

(b) Scale the y -axis appropriately and graph the first six terms of this sequence. List them all if you haven't already.

(c) According to this geometric progression, how many minutes per day would Maria be walking on Week #10? Why is this not a viable answer?

