Unit 1 Quiz: Sequences challenge problems

Standards:

- Identify geometric and arithmetic sequences
- Apply function notation and recursive definitions of functions
  HSF-IF.A.3 Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers.
  HSF-LE.A.2 - Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs.

1. Given the arithmetic sequence whose first two terms are 4 and 9.
   a. Write down
   b. Write down the value of the common difference
   c. Find
   d. Write and equation relating and
2. Given the geometric sequence whose first term is 3 with a growth rate of .
   a. Find the second term .
   b. State the value of the first term using function notation in an equation.
   c. Define recursively using function notation. (There should be two equations)
   d. Write down the value of ——.
3. A sequence is defined recursively as

   a. Is the sequence arithmetic, geometric, or neither?
   b. Find the value of .
4. Given an arithmetic sequence whose first term is 11 and third term 17.
   a. Using for the common difference and for the second term, write and equation relating the values of the first two terms. (you may use or)
   b. Write an equation relating the second and third terms.
   c. Solve the system of equations to find and .
5. Given an arithmetic sequence , find .
6. Given a geometric sequence — —— , find .