

Sequences and Series (Sections 11.1 – 11.5 in Algebra 2)

By the end of this Unit you should be able to:

General

- Find the terms of a sequence given an explicit or recursive formula
- Evaluate the sum of a series expressed in sigma notation

Arithmetic

- Recognize arithmetic sequences
- Find the indicated term, common difference, 1st term, or term number of an arithmetic sequence
- Write and use explicit and recursive formulas for arithmetic sequences
- Find arithmetic means between two numbers
- Find the sum of the first n terms of an arithmetic series
- Use the formula to evaluate an arithmetic series

Geometric

- Recognize geometric sequences

- *Introduction to Simplifying Exponents*

1. *Use properties of exponents to simplify expressions*

** make sure to include how to simplify: and*

2. *Evaluate and simplify expressions with negative exponents*

3. *Evaluate expressions with fractional exponents*

4. *Rewrite expressions with fractional exponents using radicals and vice versa*

- Find the indicated term, common ratio, and first term of a geometric sequence
- Find geometric means between two numbers
- Find the sum of the first n terms of a geometric series
- Use the formula for a geometric series

Sequences and Series

- model real world _____
- any time you see a pattern in the real world, and are curious about a future _____ (sequences) or a future _____ (series), you are typically able to figure it out with a _____

Examples:



4. 



5. 



6. 

Sequence -

Ex. 1, 3, 5, 7, 9 ...

The three dots following a sequence is called an **ellipsis**. This indicates that the sequence is _____, meaning it continues without an _____.

If there is a final term in the sequence, it has an **end**, meaning the sequence is _____.

Terms (t) can be listed with subscripts. (Make note some texts use "a" or "u" to represent terms):

Explicit Formula -

ex. $t_n = 2n$
Find the 10th term:

Recursive Formula-

ex. $t_n = t_{n-1} - 2$
and $t_1 = 1$
Find the first 3 terms:

HW: pg. 944 lesson 1.6 #1-30 odd