Unit 10: Sequences: Recursive Rule for Arithmetic and geometric.

Lesson 10-3

Objectives:

* I can identify an arithmetic sequence & list its terms.
* I can identify the common difference in an arithmetic sequence & calculate the nth term.
* I can write the recursive rule or the explicit rule of an arithmetic sequence

Agenda:

* Video: Power point with notes
* Practice
* Application
* Summary: Closing with Fibonacci sequence

Focus Questions:

1. How do we write an explicit rule and a recursive rule for an arithmetic sequence?
2. What is the connection between arithmetic sequences and linear functions?
3. Homework 10-3

Quiz on lesson 1

Reminders: Test corrections # 9 should be done.

Regents Review 8 take home quiz should be done and checked by me.



Do Now: Recursive Sequences



1.









4)



5)

1. 



**When will I ever need this?** : <https://www.youtube.com/watch?v=nt2OlMAJj6o>

**In recursive sequences preceding terms are used to define the next term of the sequence.**

**Arithmetic Sequences can be written explicitly or recursively.**

1. For example, Given the sequence {13, 18, 23, 28 …}
2. Generate the explicit definition for this sequence.
3. Let’s look at the recursive definition.

Note:  is given as part of the definition.



One of the most famous of all **recursively defined** sequences is known as the **Fibonacci Sequence**. Let’s play around with it in the next exercise.

 The Fibonacci Sequence is defined recursively as follows:

 $a\_{n}=a\_{n-1}+a\_{n-2}, a\_{1}=1, a\_{2}=1$

Evaluate $a\_{3}$, $a\_{4}$, and $a\_{5}$



1. **Generate the next 3 terms of the geometric sequence and write the equivalent explicit equation.**





Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_Recursive Sequences Homework 10-3

Find the first 4 terms in each sequence.

 Hint: Start with n = 2, then n = 3, then n = 4.



2)

Hint: Start with n = 1, then n = 2, then n = 3.



3)



4)

Hint: Start with n = 2, then n = 3, then n = 4.

5) Do one problem only: either a, b or c.

Start Portfolio:

Summary: Exit Ticket

* Write 3 key ideas you learned today:
* Write 2 interesting facts about today’s lesson
* Write about a concept that you might be confused about.