Recursion Models

AMDM Recursive & Explicit Name:

**Complete the next 3 terms in the sequence and give a RECURSIVE DEFINITION (i.e. a rule on how to go from one term to the next)**

**1.** 2,4,6,8, , ,

RULE:

**2.** 2,4,8,16,32 , ,

RULE:

**3.** 4, 12, 36, 108, , ,

RULE:

**4.** 8, 5, 2, -1, , ,

RULE:

**5.** 54, 18, 6, 2, , ,

RULE:

**6.** 4, 10, 16, 22, , ,

RULE:

**7.** 2, 7, 22, 67, , ,

RULE:

**Recursive functions vs. Explicit functions**

8. Create a sequence from the following. **Recursive Definition**:

 and 

Find 

9. Create a sequence from the following.

**Explicit Definition**:



Find 

How would you define the following?

Recursive Definition –

Explicit Definition –

10. Create the first few terms of a sequence using the following ***Recursive Definitions:***

* 1.  and 
  2.  and 
  3.  and 

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| n | 1 | 2 | 3 | 4 | 5 | 6 |
| **an** | **3** | **4** | **4** | **7** |  |  |

1. Complete the table.



1. Generate 3 different sequences that could be defined by 
2. Create the first few terms of a sequence using the following ***Explicit Definitions:***
   1. 
   2. 
   3.  and determine 
3. Create the first few terms of a sequence using the following **mixed** ***Recursive Definitions:***
   1.  and 

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| n | 1 | 2 | 3 | 4 | 5 |
| **tn** | **3** | **4** | **5** | **7** | **…** |

* 1.  and