**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per:\_\_\_\_ Scores: #1:\_\_\_\_\_ #2:\_\_\_\_\_ #3:\_\_\_\_\_ #4:\_\_\_\_\_ #5:\_\_\_\_\_\_**

Spring Final Review for Unit 6 Sequences

**Learning Target #1:** “I can recognize that sequences are functions with limited domain.” F-IF-3

1. What is a function?
2. What is a sequence?
3. List the differences between a sequence and a function in the four representations.

|  |  |  |  |
| --- | --- | --- | --- |
| Situation | Equation | Table | Graph |

1. Is a sequence a function? Include the similarities and differences in your explanation.

**Learning Target #2:** “I can identify sequences as either arithmetic or geometric.”

1. Determine if the given sequences are Arithmetic, Geometric, Neither, or Both. Explain how you know your choice is correct. Then determine the zeroth term and the next 3 terms.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| c. 8, 4, 2, 1, …

|  |
| --- |
| Circle: Arithmetic, Geometric, Neither, Both |
| Explain how you know: |
| Zeroth Term: |  | Next 3 Terms: |  |  |  |

 | d. 5, 5, 5, 5, …

|  |
| --- |
| Circle: Arithmetic, Geometric, Neither, Both |
| Explain how you know: |
| Zeroth Term: |  | Next 3 Terms: |  |  |  |

 |
| c. 33, 34.25, 35.5, 36.75, …

|  |
| --- |
| Circle: Arithmetic, Geometric, Neither, Both |
| Explain how you know: |
| Zeroth Term: |  | Next 3 Terms: |  |  |  |

 | d. 12, -48, 192, -768, …

|  |
| --- |
| Circle: Arithmetic, Geometric, Neither, Both |
| Explain how you know: |
| Zeroth Term: |  | Next 3 Terms: |  |  |  |

 |

**Learning Target #3:** “I can construct arithmetic sequences in the four representations: situation, table, graph, and equation, and use them to model situations.” F-LE-2, F-BF-2

1. Create your own ARITHMETIC SEQUENCE and represent it in the four representations below.

|  |  |
| --- | --- |
| Situation: Create an Arithmetic Sequence. | Explicit Equation: Write the Explicit Equation for your Arithmetic Sequence. |
| Table: Create the Table for your Arithmetic Sequence.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *n* | 0 | 1 | 2 | 3 | 4 | 10 | 50 | 100 |
| *t(n)* |  |  |  |  |  |  |  |  |

 | Graph: Create the Graph for your Arithmetic Sequence. |

**Learning Target #4:** “I can construct geometric sequences in the four representations: situation, table, graph, and equation, and use them to model situations.” F-LE-2, F-BF-2

1. Create your own GEOMETRIC SEQUENCE and represent it in the four representations below.

|  |  |
| --- | --- |
| Situation: Create a Geometric Sequence. | Explicit Equation: Write the Explicit Equation for your Geometric Sequence. |
| Table: Create the Table for your Geometric Sequence.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *n* | 0 | 1 | 2 | 3 | 4 | 10 | 50 | 100 |
| *t(n)* |  |  |  |  |  |  |  |  |

 | Graph: Create the Graph for your Geometric Sequence. |

**Learning Target #5:** “I can write arithmetic and geometric sequences both explicitly and recursively.” F-BF-2

1. Consider the following sequence 2, 4, … Assuming the sequence is **ARITHMETIC** answer the following:

|  |  |  |
| --- | --- | --- |
| *i.* Write the next four terms. | *ii.* What is the Common Difference? | *iii.* What is the zeroth term, $t\left(0\right)$? |
| *iii.* Write the explicit equation for $t\left(n\right)$. | *iv.* Write the recursive equation for $t\left(n+1\right)$. |

1. Consider the following sequence 2, 4, … Assuming the sequence is **GEOMETRIC** answer the following:

|  |  |  |
| --- | --- | --- |
| *i.* Write the next four terms. | *ii.* What is the Common Ratio? | *iii.* What is the zeroth term, $t\left(0\right)$? |
| *iii.* Write the explicit equation for $t\left(n\right)$. | *iv.* Write the recursive equation for $t\left(n+1\right)$. |

1. Go back to #6 where you created your own Arithmetic Sequence. Now write the recursive equation for that sequence. Don’t forget to write a term!
2. Go back to #7 where you created your own Geometric Sequence. Now write the recursive equation for that sequence. Don’t forget to write a term.!
3. In your own words, explain how to write a recursive equation.