Name ____ Date ____________________

Arithmetic and Geometric Sequences

A sequence is a function whose __________ is a set of consecutive whole numbers. So the input in any sequence is ____________.

The output of a sequence are called the _________ of the sequence.

A sequence can be specified by an ______________ or a _________.

<u>REVIEW</u>: Arithmetic Sequence:

A sequence of terms that have a _________________ ___________________ between them.
To find the common difference, _________ the second term by the first term. Verify that the difference is consistent.

Let's recall the two types of formulas for Arithmetic Sequences:

Arithmetic Explicit Formula	**Used for finding the n^{th} term of a sequence**	
Recursive Formula	**Used for finding the NEXT term in a sequence**	

1. 97 is the _____th term of the sequence: -3, 1, 5, 9, …

2. – 73 is the _____th term of the sequence: 5, 2, -1, -4, …

Geometric Sequence:

A sequence of terms that have a ________________ ______________ between them.
To find the common ratio, _________ the second term by the first term. Verify that the ratio is consistent.

Determine if the sequence is geometric and find the common ratio.

1. **4, 8, 16, 32, …**
2. **256, 64, 16, 4, …**
3. **3, 6, 9, 12, …**

So, what are the TWO different types of formulas for Geometric Sequences:

Geometric Explicit Formula	**Used for finding the n^{th} term of a sequence**	
Recursive Formula	**Used for finding the NEXT term in a sequence**	

Sequence	**Common Ratio (r)**	**Explicit Formula**	**Recursive Formula**	**Given Term (n^{th})**
6, 3, 1.5, .75, …				a_7=
-4, -12, -36, -108, …				a_{10}=
3, 12, 48, 192, …				a_5=