Sequence Notes: Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

🡪 A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is an ordered list of numbers. (Example: )

🡪 Each number in a sequence is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_. (In the above sequence, 8 is the 4th term.)

|  |  |
| --- | --- |
| **Arithmetic Sequence**  🡪 In an arithmetic sequence, each term is found by \_\_\_\_\_\_\_\_\_\_\_\_\_\_ the same number to the previous term. This number being added each time is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. | **Geometric Sequence**  🡪 In a geometric sequence, each term is found by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a nonzero constant by the previous number. This number you are multiplying with each time is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |

\*\*\*You are never subtracting, just adding a negative number\*\*\*

\*\*\*You are never dividing, just multiplying by a fraction\*\*\*

Determine whether each sequence is arithmetic or geometric. Then state the common difference or common ratio and find the next two terms in the sequence.

|  |  |
| --- | --- |
| 1) | 2) |
| 3) | 4) |
| 5) | 6) |
| 7) | 8) |
| 9) | 10) |

**🡪 We can also write a variable expression to express the relationship between 2 consecutive terms in a sequence.**

|  |  |
| --- | --- |
| Example 1)  What is the common difference: \_\_\_\_\_\_\_\_\_  If \_\_\_\_\_\_ represents a number in the sequence the next term in the sequence can be determined using the variable expression:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_  Check: | Example 2)  What is the common ratio: \_\_\_\_\_\_\_\_\_  If \_\_\_\_\_\_\_ represents a number in the sequence the next term in the sequence can be determined using the variable expression:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_  Check: |

Sequence Notes: Name: Answer Key

🡪 A sequence is an ordered list of numbers. (Example: )

🡪 Each number in a sequence is called a term. (In the above sequence, 8 is the 4th term.)

|  |  |
| --- | --- |
| **Arithmetic Sequence**  🡪 In an arithmetic sequence, each term is found by adding the same number to the previous term. This number being added each time is called the common difference. | **Geometric Sequence**  🡪 In a geometric sequence, each term is found by multiplying a nonzero constant by the previous number. This number you are multiplying with each time is called the common ratio. |

\*\*\*You are never subtracting, just adding a negative number\*\*\*

\*\*\*You are never dividing, just multiplying by a fraction\*\*\*

Determine whether each sequence is arithmetic or geometric. Then state the common difference or common ratio and find the next two terms in the sequence.

|  |  |
| --- | --- |
| 1)  Arithmetic  Common Difference | 2)  can’t be arithmetic  Geometric  Common Ratio  81, 243 |
| 3)  Arithmetic  Common Difference | 4)  can’t be arithmetic  Geometric  Common Ratio |
| 5)  Arithmetic  Common Difference | 6)  can’t be arithmetic  Geometric  Common Ratio  10, 5 |
| 7)  can’t be arithmetic  Geometric  Common Ratio | 8)  Arithmetic  Common Difference |
| 9)  can’t be arithmetic  Geometric  Common Ratio | 10)  Arithmetic  Common Difference |

**🡪 We can also write a variable expression to express the relationship between 2 consecutive terms in a sequence.**

|  |  |
| --- | --- |
| Example 1)  What is the common difference:  If n represents a number in the sequence the next term in the sequence can be determined using the variable expression:  Check: | Example 2)  What is the common ratio:  If n represents a number in the sequence the next term in the sequence can be determined using the variable expression:  Check: |