FST Name:

Notes 4.4 Date: Block:

***4.4 Geometric Sequences and Series***

Consider the following sequence. $\left\{3, 6, 12, 24, 48…\right\} $Write the sequence in RECURSIVE notation.

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| **Geometric Sequences** |
| Recursive Formula | Explicit Formula |
|  |  |

**Example.** Give the recursive and explicit notation for the geometric sequence. $\left\{10, 30, 90, 270 . . . \right\}$

 Recursive Explicit

**Practice 1)** Give the recursive and explicit notation for the geometric sequence. $\left\{625, 125, 25, 5, 1 . . . \right\}$

 Recursive Explicit

**Practice 2)** Write the explicit formula for the geometric sequence whose common ratio is 2 and $a\_{4}=12$.

**Practice 3**) Two terms of a geometric sequence are $a\_{3}=-48$ and $a\_{6}=3072$. Write an explicit formula for the sequence.

**Word Problem 1.** A virus reproduces by dividing into two, and after a certain growth period, it divides into two again. As the virus continues to reproduce, it will continue to divide in two. How many viruses will be in a system starting with a single virus AFTER 10 divisions?

**Geometric Series**

**Example 1.** Write each geometric series below in sigma notation.

a) $5+20+80+320+ . . . +81, 920 $ b) $15-30+60-120+240-480+…$