**To be copied in your Unit Packet on the Tab “Geometric Sequences”:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 |
| 2 | 6 | 18 | 54 |  |  |

Fill in the rest of the table based on the pattern.

How could we find the 100th term in this sequence?

How could we find the nth term in this sequence?

**Geometric Sequences**

A sequence of numbers that have a pattern of multiplying a number every time it goes up.

To find the nth term in a sequence we use:

$$a\_{n}=a\_{1}∙r^{n-1}$$

$a\_{n}$ = the nth term of the sequence

$a\_{1}$ = the first term in the sequence

$r$ = common ratio (what is being multiplied every time)

$n$ = the term you are looking for

You try:

1. Given the sequence 4, 12, 36, 108 find the 32nd term.
2. Given the sequence 1, ½, ¼ find the 7th term.
3. Find the nth term when $a\_{1}$= 7 and r = 3.
4. Is 0.4, .004, .0004, .00004 a geometric sequence? If so, what is the common ratio?
5. What is the 100th term for the sequence 5, 10, 20, 40….