U7D3MCR 3UI

Geometric Sequences

What is similar about the following sequences?

- 1. 2, 6, 18, 54 . . .
- 2. 2, 10, 50, 250...
- 3. 5, -10, 20, -40, 80....

All of these sequences are classified as geometric sequences since each term is generated

by multiplying the previous term by the same amount called the _____

A geometric sequence looks like : $a, ar, ar^2, ar^3, ...$ or In general, $t_n = ar^{n-1}$ $t_n = ar^n = r = r^n = r$

Examples:

- 1. Determine t_n and t_{10} for the following geometric sequences: a) 5, 20, 80, 320 b) $2, -\frac{3}{2}, \frac{9}{8}, -\frac{27}{32}$
- Determine the number of terms in the sequence
 6, 12, 24...
 96.
- 3. Determine t_{10} if for each of the following geometric sequences:
- a) if $t_3 = 15$ and $t_6 = -405$
- b) if $t_3 = 60$ and $t_7 = 960$.
- 4. Express the geometric sequences defined by the general term $t_n = 3\left(\frac{2}{5}\right)^{n-1}$, as a recursive sequence.