What is similar about the following sequences?
1.

2, 6, 18, 54 ....
2. 2, 10, 50, 250 . . .
3. $\quad 5,-10,20,-40,80 \ldots$

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 $\qquad$ .

A geometric sequence looks like :

$$
\begin{array}{ll} 
& a, a r, a r^{2}, a r^{3}, \ldots \text { or } \\
\text { In general, } & t_{n}=a r^{n-1}
\end{array}
$$

$\begin{array}{ll}t_{n}= & a= \\ n= & r=\end{array}$

Examples:

1. Determine $t_{n}$ and $t_{10}$ for the following geometric sequences:
a) $5,20,80,320 \ldots$
b) $2,-\frac{3}{2}, \frac{9}{8},-\frac{27}{32}$
2. Determine the number of terms in the sequence 3, 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.
