

Chapter 1 Summary

Chapter 1 PLO (prescribed learning outcome): Analyze **arithmetic** and **geometric** sequences and series to solve problems.

Sequence: $t_1, t_2, t_3, \dots, t_n$

Series: $S_n = t_1 + t_2 + t_3 + \dots + t_n$

Arithmetic	Geometric
1) General Term	
$t_n = t_1 + (n-1)d$	$t_n = t_1 \cdot r^{n-1}$

Arithmetic	Geometric
2) (Finite) Sum	
$S_n = \frac{n}{2}[2t_1 + (n-1)d]$ $S_n = \frac{n}{2}(t_1 + t_n)$	$S_n = \frac{t_1(r^n - 1)}{r - 1}$ $S_n = \frac{r \cdot t_n - t_1}{r - 1}$
3) Infinite Sum	
	$S_\infty = \frac{t_1}{1 - r}$
4) Word Problems	