Concepts and Formulas

Sequence and Series

Sequence and Series Formulas

	Arithmetic Progression	**Geometric Progression**
Sequence	a, a+d, a+2d,.....,a+(n-1)d,....	a, ar, ar^2,....,$ar^{(n-1)}$,...
Common Difference or Ratio	Successive term – Preceding term Common difference = d = $a_2 - a_1$	Successive term/Preceding term Common ratio = r = $ar^{(n-1)}/ar^{(n-2)}$
General Term (nth Term)	$a_n = a + (n-1)d$	$a_n = ar^{(n-1)}$
nth term from the last term	$a_n = l - (n-1)d$	$a_n = 1/r^{(n-1)}$
Sum of first n terms	$s_n = n/2(2a + (n-1)d)$	$s_n = a(1 - r^n)/(1 - r)$ if r < 1 $s_n = a(r^n - 1)/(r - 1)$ if r > 1

*Here, a = first term, d = common difference, r = common ratio, n = position of term, l = last term