

# INDEX CARD #12 (BACK & FRONT)

## SEQUENCES & SERIES

ARITHMETIC – HAS A COMMON DIFFERENCE (2<sup>ND</sup> TERM – 1<sup>ST</sup> TERM)

GEOMETRIC – HAS A COMMON RATIO (2<sup>ND</sup> TERM / 1<sup>ST</sup> TERM)

FINITE – ENDS

INFINITE – DOES NOT END

RECURSIVE FORMULA – USES PREVIOUS TERM TO GET THE NEXT TERM

EXPLICIT FORMULA – USED TO FIND A SPECIFIC TERM

SEQUENCE – A SET OF NUMBERS WITH A PATTERN (SEPARATED BY COMMAS)

SERIES – THE SUM OF A SET OF NUMBERS WITH A PATTERN (SEPARATED BY PLUS SIGNS)

ARITHMETIC	GEOMETRIC
<b>EXPLICIT:</b> $a_n = a_1 + (n - 1)d$	<b>EXPLICIT:</b> $a_n = a_1(r)^{n-1}$
<b>EVALUATING THE SERIES:</b> $S_n = \frac{n(a_1+a_n)}{2}$	<b>EVALUATING THE SERIES:</b> $S_n = \frac{a_1(1-r^n)}{1-r}$

WHEN GIVEN A FORMULA : SUBSTITUTE FOR N = # (TERM #)

WHEN THERE IS  $a_n = a_{n-1} + n$

### SUMMATION - SIGMA

$$\sum_{n=\#}^{\#} \text{Formula}$$

Sub in the number at the bottom in the formula  
Continue substituting until you substitute the # on the top  
Add all of the terms together

If there is a # in front multiply the sum by that #