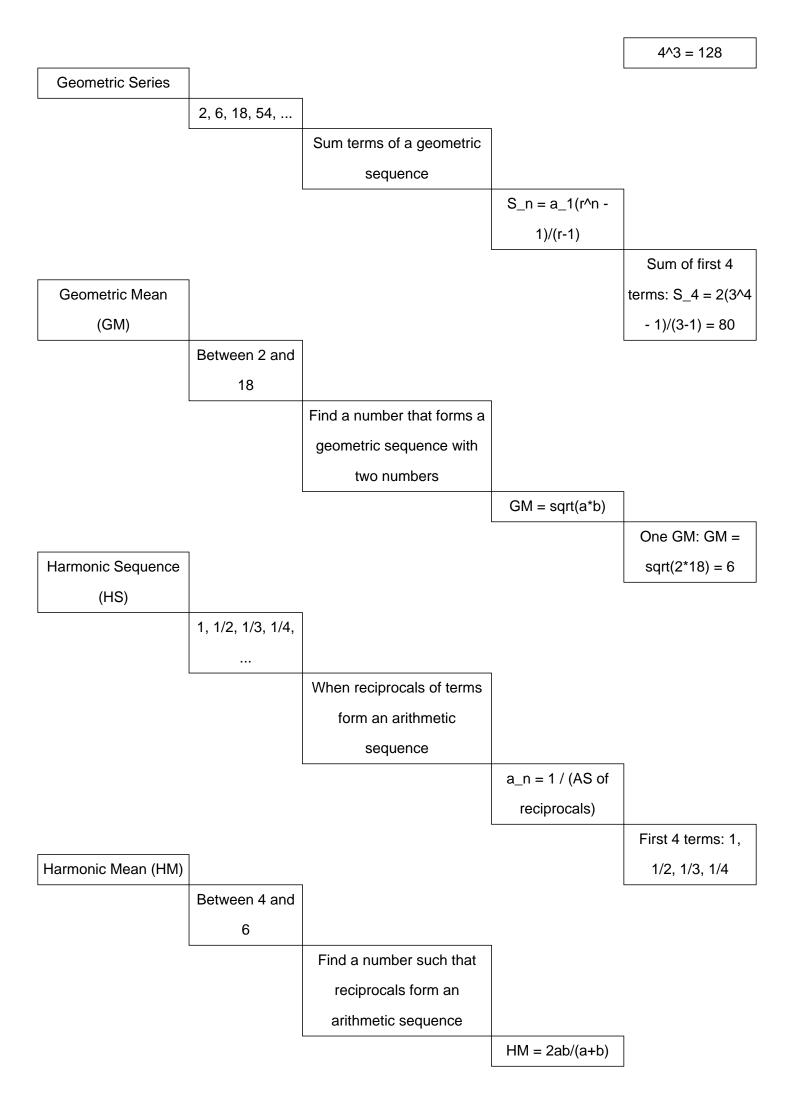
## **Types of Sequences and Series**

Туре	Example	When to Use	Formula E	xample Calculatio
Arithmetic Sequence				
(AS)				
	2, 5, 8, 11,		_	
		When a pattern increases		
		or decreases by a constant		
		difference		_
			$a_n = a_1 + (n-1)d$	
				6th term: a_6 = 2 +
Arithmetic Series				(6-1)3 = 17
	2, 5, 8, 11,		_	
		Sum terms of an arithmetic		
		sequence		_
			S_n = n(a_1 +	
			a_n)/2 or S_n =	
			n/2[2a_1 + (n-1)d]	
				Sum of 100 terms:
Arithmetic Mean (AM)				a_100 = 2 + 99(3)
	Between 5 and			= 299, S_100 =
	11		_	100(2+299)/2 =
		Find middle values in an		15,050
		arithmetic sequence		_
			AM = (a+b)/2	
				One AM: AM =
Geometric Sequence				(5+11)/2 = 8; 4
(GS)				AMs between 5
	2, 8, 32, 128,		_	and 20: Sequence:
		When a pattern multiplies		5,8,11,14,17,20
		by a constant ratio		
			a_n = a_1 * r^(n-1)	
				4th term: a_4 = 2 *



HM = 2\*4\*6/(4+6)= 4.8

Fibonacci Sequence

0, 1, 1, 2, 3, 5,

8, ...

Each term is the sum of the previous two

 $F_n = F_{n-1} + F_{n-2}$ 

Next term after 8:

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