Series

	4 – Mastery	3 – Proficient	2 - Basic	1 – Below Basic	0 – No Evidence
Determine whether a series converges or diverges. (LIM-7.A)	Can Extend thinking beyond the standard, including tasks that may involve one of the following: • Designing • Connecting • Synthesizing • Applying • Justifying • Critiquing • Analyzing • Creating • Proving	Determine whether a series converges **(including conditional or absolute)** or diverges using any test. **Follows math practices of algebraic computation, precision and reasoning***	Determine whether a series converges or diverges using **more than four** of the following tests: • Geometric series • P-Series • Nth Term Test • Direct Comparison • Limit Comparison • Alternating Series Test • Integral Test • Ratio Test	Determine whether a series converges or diverges using four of the following test: • Geometric series • P-Series • Nth Term Test • Direct Comparison • Limit Comparison • Alternating Series Test • Integral Test • Ratio Test	Little evidence of reasoning or application to solve the problem Does not meet the criteria in a level 1
Determine or estimate the sum of a series. (LIM-7.B, LIM-8.C)		Determine the sum of a geometric series And Find the error using alternating series error **and** Lagrange error **Follows math practices of algebraic computation, precision and reasoning***	Determine the sum of a geometric series **And** **Find the error using alternating series error or Lagrange error**	Determine the sum of a **geometric series.**	
Construct and use Taylor polynomials. (LIM-8.A, LIM-8B)		Write a **Taylor** polynomial using the definition. **And** **Use the polynomial to estimate a function value.** **Follows math practices of algebraic computation, precision and reasoning***	Write a **Maclaurin** polynomial using the definition. **And** **Use the polynomial to estimate a function value.**	**Write the coefficients** of a Taylor or Maclaurin polynomial using the definition	
Write a power series representing a given function. (LIM-8.E, LIM-8.F, LIM-8.G) Determine the radius and interval of convergence of a power series. (LIM-8.D)		Manipulate a power series using **a combination** of the following: • Algebraic manipulations • Substitution • Properties of Geometric Series • Integration • Differentiation AND **Find the interval of convergence including if the endpoints are closed or open intervals** **Follows math practices of algebraic computation, precision and reasoning***	**Manipulate a power series using any of the following:** • **Algebraic manipulations** • **Substitution** • **Properties of Geometric Series** • **Integration** • **Differentiation** AND Sets up the ratio test and simplifies correctly to **identify the radius of convergence.**	Knows the Maclaurin series for • cos x • ex • sin x • 1/(1-x) AND Sets up the ratio test and simplifies correctly.	

*Math Practices for AP Calculus include:

- Algebraic processes and computations completed logically and correctly
- Attend to precision graphically, numerically and analytically
- Clearly present reasoning and justification with accurate and precise language