Calculus BC Schedule-- Unit 9 (Chapter 10) Infinite Series

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 22	*10-Feb*	*11-Feb*	*12-Feb*	*13-Feb*	*14-Feb*
Lesson	10.2 Infinite Series	10.8 Power Series	**EARLY DISMISSAL** 10.8 Power Series	10.6 Ratio Test, 10.4 Direct Comparison Test	10.6 Ratio Test, 10.4 Direct Comparison Test **Quiz 10.2 & 10.8**
HMWK	**HW1**--p.731 #19, 25,29,37,39,45,49, 51,53,55, AP Practice #4	**HW2**--p.787 #45, 46,53a,54a,55a, 56a	**HW3**--p.787 #57a, 58a,59,79a,80a, AP Practice #6,7b	**HW4**--p.770 #5,7,9,23, p.752 #5,7,9 **Study for Quiz 10.2 & 10.8**	**HW5**--p.770 #17,25,49, AP Practice #2, p.752 #1,57ab, AP Practice #3
Week 23	*17-Feb*	*18-Feb*	*19-Feb*	*20-Feb*	*21-Feb*
Lesson	**NO SCHOOL** -- President's Day	10.3 Properties of Series, nth term Test, Integral Test, p-series Test, 10.4 Limit Comparison Test	**EARLY DISMISSAL** 10.3 Properties of Series, nth term Test, Integral Test, p-series Test, 10.4 Limit Comparison Test	10.5 Alternating Series, Absolute Convergence **Black History Month Assembly?**	10.5 Alternating Series, Absolute Convergence
HMWK	**No Additional Homework**	**HW6**--p.743 #2,9, 10,11,15,17,21,23, 33, p.752 #15,17,23	**HW7**--p.743 #39,41, AP Practice #1,2,3, p.752 #37,39, AP Practice #1	**HW8**--p.762 #1,2, 7,9,19,41,43,49	**HW9**--p.762 #45, AP Practice #4, p.775 #8,28,35
Week 24	*24-Feb*	*25-Feb*	*26-Feb*	*27-Feb*	*28-Feb*
Lesson	10.9 Taylor Series; Maclaurin Series	10.9 Taylor Series; Maclaurin Series **Quiz 10.3,10.4, 10.5, & 10.6**	**EARLY DISMISSAL** 10.9 Taylor Series; Maclaurin Series	10.10 Taylor Polynomial Approximation & LaGrange Error Bound	10.10 Taylor Polynomial Approximation & LaGrange Error Bound
HMWK	**HW10**--p.797 #7,9,29,30,31,34 **Study for Quiz 10.3,10.4, 10.5, & 10.6**	**HW11**--p.797 #10, 11,13,15,17,19, p.787 #67	**HW12**--p.797 #21,23,25,27,39, AP Practice #1,2,3	**HW13**--p.805 #1,5,9,20,21, AP Practice #2,3,4	**HW14**--Calculator p.805 #13ad, 14ad,15ad,16ad, AP Practice #5

Calculus BC Schedule-- Unit 9 (Chapter 10) Infinite Series

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 25	*3-Mar*	*4-Mar*	*5-Mar*	*6-Mar*	*7-Mar*
Lesson	**NO SCHOOL** -- Casimir Pulaski Day	10.10 Taylor Polynomial Approximation & LaGrange Error Bound	10.2 - 10.10 Series	10.2 - 10.10 Series	**NO SCHOOL** -- Teacher Institute Day
HMWK	**No Additional Homework**	**HW15**--AP Practice Problems	**HW16**--AP Series Problems	**HW17**--AP Series Problems	**No Additional Homework**
Week 26	*10-Mar*	*11-Mar*	*12-Mar*	*13-Mar*	*14-Mar*
Lesson	*Unit 9 Review (Book Chapter 10)*	*Unit 9 Review (Book Chapter 10)*	**ACT for Juniors**	**ISA Test for Juniors**	**Unit 9 TEST**
HMWK	**HW18**--p.811 #16, 17,22,35,42,52, AP Review #1,5,7,11,12	**STUDY for TEST!!!**	**STUDY for TEST!!!**	**STUDY for TEST!!!**	**No Additional Homework**

Calculus BC Schedule-- Unit 9 (Chapter 10) Infinite Series

	Monday	Tuesday	Wednesday	Thursday	Friday

Unit 9: Infinite Series

LIM-7
Applying limits may allow us to determine the finite sum of infinitely many terms.

LEARNING OBJECTIVE	ESSENTIAL KNOWLEDGE
LIM-7.A Determine whether a series converges or diverges. BC ONLY	LIM-7.A.1 The nth partial sum is defined as the sum of the first n terms of a series. BC ONLY
	LIM-7.A.2 An infinite series of numbers converges to a real number S (or has sum S), if and only if the limit of its sequence of partial sums exists and equals S. BC ONLY
LIM-7.A Determine whether a series converges or diverges. BC ONLY	LIM-7.A.3 A geometric series is a series with a constant ratio between successive terms. BC ONLY
	LIM-7.A.4 If a is a real number and r is a real number such that $\lvert r\rvert < 1$, then the geometric series $\sum_{n=0}^{\infty} ar^n = \frac{a}{1-r}$. BC ONLY
LIM-7.A Determine whether a series converges or diverges. BC ONLY	LIM-7.A.5 The nth term test is a test for divergence of a series. BC ONLY
LIM-7.A Determine whether a series converges or diverges. BC ONLY	LIM-7.A.6 The integral test is a method to determine whether a series converges or diverges. BC ONLY
LIM-7.A Determine whether a series converges or diverges. BC ONLY	LIM-7.A.7 In addition to geometric series, common series of numbers include the harmonic series, the alternating harmonic series, and p-series. BC ONLY
LIM-7.A Determine whether a series converges or diverges. BC ONLY	LIM-7.A.8 The comparison test is a method to determine whether a series converges or diverges. BC ONLY
	LIM-7.A.9 The limit comparison test is a method to determine whether a series converges or diverges. BC ONLY
LIM-7.A Determine whether a series converges or diverges. BC ONLY	LIM-7.A.10 The alternating series test is a method to determine whether an alternating series converges. BC ONLY
LIM-7.A Determine whether a series converges or diverges. BC ONLY	LIM-7.A.11 The ratio test is a method to determine whether a series of numbers converges or diverges. BC ONLY
	EXCLUSION STATEMENT *The nth term test for divergence, and the integral test, comparison test, limit comparison test, alternating series test, and ratio test for convergence are assessed on the AP Calculus BC Exam. Other methods are not assessed on the exam. However, teachers may include additional methods in the course, if time permits.*
LIM-7.A Determine whether a series converges or diverges. BC ONLY	LIM-7.A.12 A series may be absolutely convergent, conditionally convergent, or divergent. BC ONLY
	LIM-7.A.13 If a series converges absolutely, then it converges. BC ONLY
	LIM-7.A.14 If a series converges absolutely, then any series obtained from it by regrouping or rearranging the terms has the same value. BC ONLY
LIM-7.B Approximate the sum of a series. BC ONLY	LIM-7.B.1 If an alternating series converges by the alternating series test, then the alternating series error bound can be used to bound how far a partial sum is from the value of the infinite series. BC ONLY

LIM-8
Power series allow us to represent associated functions on an appropriate interval.

LEARNING OBJECTIVE	ESSENTIAL KNOWLEDGE
LIM-8.A Represent a function at a point as a Taylor polynomial. BC ONLY	LIM-8.A.1 The coefficient of the nth degree term in a Taylor polynomial for a function f centered at $x = a$ is $\frac{f^{(n)}(a)}{n!}$. BC ONLY
	LIM-8.A.2 In many cases, as the degree of a Taylor polynomial increases, the nth degree polynomial will approach the original function over some interval. BC ONLY
LIM-8.B Approximate function values using a Taylor polynomial. BC ONLY	LIM-8.B.1 Taylor polynomials for a function f centered at $x = a$ can be used to approximate function values of f near $x = a$. BC ONLY
LIM-8.C Determine the error bound associated with a Taylor polynomial approximation. BC ONLY	LIM-8.C.1 The Lagrange error bound can be used to determine a maximum interval for the error of a Taylor polynomial approximation to a function. BC ONLY
	LIM-8.C.2 In some situations, the alternating series error bound can be used to bound the error of a Taylor polynomial approximation to the value of a function. BC ONLY
LIM-8.D Determine the radius of convergence and interval of convergence for a power series. BC ONLY	LIM-8.D.1 A power series is a series of the form $\sum_{n=0}^{\infty} a_n(x-r)$, where n is a non-negative integer, $\{a_n\}$ is a sequence of real numbers, and r is a real number. BC ONLY
	LIM-8.D.2 If a power series converges, it either converges at a single point or has an interval of convergence. BC ONLY
	LIM-8.D.3 The ratio test can be used to determine the radius of convergence of a power series. BC ONLY
	LIM-8.D.4 The radius of convergence of a power series can be used to identify an open interval on which the series converges, but it is necessary to test both endpoints of the interval to determine the interval of convergence. BC ONLY
	LIM-8.D.5 If a power series has a positive radius of convergence, then the power series is the Taylor series of the function to which it converges over the open interval. BC ONLY
	LIM-8.D.6 The radius of convergence of a power series obtained by term-by-term differentiation or term-by-term integration is the same as the radius of convergence of the original power series. BC ONLY
LIM-8.E Represent a function as a Taylor series or a Maclaurin series. BC ONLY	LIM-8.E.1 A Taylor polynomial for $f(x)$ is a partial sum of the Taylor series for $f(x)$. BC ONLY
LIM-8.F Interpret Taylor series and Maclaurin series. BC ONLY	LIM-8.F.1 The Maclaurin series for $\frac{1}{1-x}$ is a geometric series. BC ONLY
	LIM-8.F.2 The Maclaurin series for $\sin x$, $\cos x$, and e^x provides the foundation for constructing the Maclaurin series for other functions. BC ONLY
LIM-8.G Represent a given function as a power series. BC ONLY	LIM-8.G.1 Using a known series, a power series for a given function can be derived using operations such as term-by-term differentiation or term-by-term integration, and by various methods (e.g., algebraic processes, substitutions, or using properties of geometric series). BC ONLY