Second Quarter Assignments (starting Oct. 16)

BHS/SA AP Calculus AB (2nd pd)

Wed., Oct. 16 (C) §3.3	***Thursday, Oct. 17, is the end of the first quarter. The last assignment that counts for that was the last one from §3.2.***	
	Goals	Differentiate inverse functions.
	Assignment	**§3.3** 7, AP3, AP5, AP7, AP8
Thurs., Oct. 17 **End of first quarter** **Early release (C, short)**	***Goals***	Differentiate inverse functions.
	Assignment	Work on the problems from §3.3.
Mon., Oct. 21 §3.3	***Goals***	Differentiate inverse trigonometric functions. Differentiate logarithmic functions.
	Assignment	**§3.3** 17, 25, 29, AP2, AP4, AP6
Tues., Oct. 22 §3.4, review	***Goals***	Differentiate a large variety of functions. Understand differentiability.
	Assignment	Study for the test. There are no problems assigned from §3.4.
Thurs., Oct. 24 Brief review; **Test, Ch. 3**	***Goals***	Differentiate a large variety of functions. Understand differentiability.
	Assignment	**Test, Differentiation: Composite, Implicit, and Inverse Functions (one part, some formulas supplied)** A precalculus review worksheet is due next class.
Fri., Oct. 25 §4.1, 4.2; Precalc rev ws 3 due	**Precalculus review worksheet 3 is due at the beginning of class.**	
	Goals	Use instantaneous rate of change in applied contexts. Use derivatives to help approximate values of functions.
	Vocabulary	linear approximation, linearization, differential
	Assignment	**§4.1** 13, 17, AP3; **§4.2** AP1, AP5, AP7; **Precalc review ws 4**, due Tues., Nov. 5
Mon, Oct. 28 §4.3	***Goals***	Use implicit differentiation to solve related rates problems.
	Vocabulary	related rates
	Assignment	**§4.3** 5, 31, AP1, AP4
Tues., Oct. 29 §4.3	***Goals***	Use implicit differentiation to solve related rates problems.
	Assignment	**§4.3** 23, AP5, AP6, AP9
Thurs., Oct. 31 §4.4; **AP Quiz 2**	***Goals***	Use L'Hôpital's rule to evaluate limits of indeterminate forms.
	Vocabulary	indeterminate form, L'Hôpital's rule (also spelled L'Hospital's rule)
	Assignment	**§4.4** 9, 11, 29, 31, 39, AP1, AP8; **AP Quiz 2**
Fri., Nov. 1 Review	***Goals***	Use derivatives in a variety of contexts, including applications, limits, and related rates
	Assignment	Study for the test.
Mon., Nov. 4 **Test, Ch. 4**	***Goals***	Use derivatives in a variety of contexts, including applications, limits, and related rates.
	Assignment	**Test, Applications of the Derivative, part 1 (that's the chapter title; the test only has one part)** A precalculus review worksheet is due next class.
Tues., Nov. 5 §5.1; Precalc review ws 4 due	**Precalculus review worksheet 4 is due at the beginning of class.**	
	Goals	Define types of extrema. Find extrema.
	Vocabulary	extreme values, extrema, absolute minimum, absolute maximum, Extreme Value Theorem, local maximum, local minimum, endpoint extrema, critical point, critical number
	Assignment	**§5.1** 7, 9, 10, 11, 12, 31, 55; note that problem 55 uses the results from 31.
Thurs., Nov. 7 §5.1, 5.2	***Goals***	Define types of extrema. Find extrema. Use the Mean Value Theorem.
	Vocabulary	Rolle's theorem, Mean Value Theorem, increasing, decreasing
	Assignment	**§5.1** AP3, AP5, AP6; **§5.2** 19, 23, AP1, AP6, AP7
Fri., Nov. 8 §5.2	***Goals***	Determine increasing and decreasing behavior of functions.
	Assignment	**§5.2** 33, 49, 51, AP2, AP8, AP10
Tues., Nov. 12 §5.3	***Goals***	Use the First Derivative Test and Second Derivative Test to determine maxima and minima. Define and identify concavity of functions. Find points of inflection.
	Vocabulary	First Derivative Test, concavity, concave up, concave down, test for concavity, point of inflection, test for inflection points, Second Derivative Test
	Assignment	**§5.3** 3, 6, 8, 12, 17, 63, 77
Thurs., Nov. 14 §5.3	***Goals***	Use the First Derivative Test and Second Derivative Test to determine maxima and minima. Define and identify concavity of functions. Find points of inflection.
	Assignment	**§5.3** 29abc, 59, AP1, AP2, AP4, AP5, AP7
Fri., Nov. 15 §5.3; **AP Quiz 3**	***Goals***	Define and identify concavity of functions. Find points of inflection.
	Assignment	**§5.3** 85, AP6; **Coloring Derivatives, part III** worksheet; **AP Quiz 3**
Mon., Nov. 18 §5.4	***Goals***	Use derivatives to determine the shape of functions.
	Assignment	**§5.4** 53, 54, 55
Tues., Nov. 19 §5.5	***Goals***	Solve optimization problems.
	Vocabulary	optimization
	Assignment	**§5.5** 5, AP1
Thurs., Nov. 21 §5.5, 5.6	***Goals***	Solve optimization problems. Find simple antiderivatives.
	Vocabulary	antiderivative, integration, indefinite integral, integrand, power rule for antiderivatives, differential equation, initial condition, boundary condition, initial value problem
	Assignment	**§5.5** 13, AP5; **§5.6** 11, 13, 15, 27, 31
Mon., Dec. 2 §5.6	***Goals***	Find simple antiderivatives.
	Assignment	**§5.6** 37, 49, AP4
Tues., Dec. 3 Review	***Goals***	Apply derivatives to a variety of problems.
	Assignment	Study for the test.
Thurs., Dec. 5 **Test, Ch. 5**	***Goals***	Apply derivatives to a variety of problems.
	Assignment	**Test, Applications of the Derivative, part 2 (all on one day)**

Fri., Dec. 6 Review	***Goals*** ***Assignment***	Demonstrate preparedness for the AP Calculus AB exam. Study for the exam. Write the essay.
Mon., Dec. 9 **First semester exam, paper 1**	***Goals*** ***Assignment***	Demonstrate preparedness for the AP Calculus AB exam. **First semester exam, part 1**
Tues., Dec. 10 **First semester exam, paper 2**	***Goals*** ***Assignment***	Demonstrate preparedness for the AP Calculus AB exam. **First semester exam, part 2;** The essay is due by the end of the calendar day on Thursday, Dec. 12.
Thurs., Dec. 12 Exam recap, AP FR modules (justification, establishing conditions)	***Goals*** ***Assignment***	Demonstrate preparedness for the AP Calculus AB exam. Understand how the topics of justification and establishing conditions are tested on the AP Calculus exam. Do the survey at this link on what topics you need to relearn based on your first semester exam results: https://forms.office.com/r/ANparb8A9Q. *Also* the **online survey** about what you learned from this pair of AP free response modules. That link will be in the assignment on Schoology.
Fri., Dec. 13 §6.1, 6.11	***Goals*** ***Vocabulary*** ***Assignment***	Use rectangular and trapezoidal approximations to find areas. partition, lower sum, upper sum, right-endpoint approximation, left-endpoint approximation, midpoint approximation, trapezoidal approximation, Riemann sum, definite integral notation **§6.1** 7, 13, AP2; **§6.11** 3, 5; **Precalculus review worksheet 5 assigned**, due Fri., Jan. 31
Mon., Dec. 16 §6.11	***Goals*** ***Assignment***	Use rectangular and trapezoidal approximations to find areas. **§6.11** 25abc, AP2, AP3, AP4
Tues., Dec. 17 §6.2	***Goals*** ***Vocabulary*** ***Assignment***	Define definite integrals as limits of Riemann sums. Riemann sum, norm, integrable, definite integral, integration, integrand, limits of integration, signed area **§6.2** 29, 59, 63, 69, AP5
Thurs., Dec. 19 §6.2, 6.3	***Goals*** ***Vocabulary*** ***Assignment***	Define definite integrals as limits of Riemann sums. Use both parts of the Fundamental Theorem of Calculus. Fundamental Theorem of Calculus, accumulation function, area function, dummy variable, net change, displacement **§6.2** 13, 17, AP9, AP10; in problems 13 and 17, don't use a calculator (try a sketch); **§6.3** 5, 7, 13, 70, AP2
Fri., Dec. 20 **End of semester** **Early release (B)** AP FR modules (justification, establishing conditions)	***Today is the last day of the first semester.*** **The semester exam, reflective essay, and the online surveys from last week are the last assignments that count on the second quarter.** ***Goals*** ***Assignment***	Understand how the AP Calculus exam assesses the topics of approximation and related rates. If you are in class for this lesson, do the **online survey** about what you learned from this pair of AP free response modules. The link is on Schoology.