Learning Targets-LTs (23 LTs; 9 core + 8 supplementary + 6 non-testing) **Fall 2025**

Core LTs are bold-faced in red (which must be met) while the remaining are Supplementary LTs (in green) or Non-testing LTs (in black and do not have a box ☐). In order to pass the class with a letter grade of "A", "B", or "C", a student must complete all 9 core LTs and a subset of the supplementary and non-testing LTs, along with homework provided in WeBWorK. Keep track of the Learning Targets by checking the circle ○ (for credit received from a PLTL worksheet) or the box ☐ (for credit received from an exam) below when you gain proficiency in a learning target.

Chapter 2: I can calculate, use, and explain the idea of *Limits.*

Ex1	○☐	**L.1***	I can evaluate a limit graphically or numerically including one-sided and infinite limits. (Sections 2.2 and 4.6)
Ex1	○☐	**L.2***	I can evaluate a limit analytically (using algebra), including one-sided and infinite limits. (Section 2.3; 4.6)
Ex1	○☐	**L.3**	I can recognize points at which a function is (and is not) continuous and can use continuity to evaluate limits. (Section 2.4)
	○	L.5	I can identify limits in indeterminate form and can apply L'Hopital's rule correctly. (Section 4.8)

Chapter 3: I understand the *meaning of the derivative.*

Ex1	○☐	**DM.1**	I can apply the limit definition of the derivative and calculate the derivative at a point. (Section 3.1)
	○	DM.2	I can calculate and interpret instantaneous rates of change at a point using graphs and tables, and I can understand the difference between the instantaneous rate of change and the average rate of change. (Sections 3.1 and 3.2)
	○	DM.4	I can sketch the derivative function from the graph of a given function and determine any points of non-differentiability (specifically f' from f). (Section 3.2)
Ex3	○☐	**DM.5***	I can find the tangent line to a function at a given point and use this line to approximate function values. (Section 3.1 and 4.2)

Chapter 3: I can use multiple *strategies* to calculate derivatives more efficiently.

Ex2	○☐	**DS.2***	I can use the Product and Quotient Rules to compute derivatives of simple algebraic, trigonometric, exponential, and logarithmic functions in combination. (Sections 3.3, 3.5, 3.9)
Ex2	○☐	**DS.3***	I can use the Chain Rule to compute derivatives of simple algebraic, trigonometric, exponential, and logarithmic functions in combination. (Sec 3.6)
Ex2	○☐	**DS.4**	I can use a combination of the Product, Quotient, and Chain Rules to compute derivatives of simple algebraic, trigonometric, exponential, and logarithmic functions in combination. (Sections 3.5, 3.6, 3.9)
	○	DS.5	I can compute derivatives correctly using implicit differentiation. (Sec 3.8)
WebWork only			I can compute derivatives correctly using logarithmic differentiation. (Sec 3.9)

Chapter 4: I can use derivatives to understand and solve genuine *applications.*

Ex2	○☐	DA.1	I can correctly interpret the meaning of a derivative in context (e.g. velocity, acceleration). (Section 3.4)
Ex3	○☐	DA.2*	I can use the Extreme Value Theorem to find absolute extrema of functions. (Sections 4.3 and 4.5)
Ex3	○☐	DA4a	I can explain the relationship between a function and its first and second derivatives (concavity, increasing/decreasing, points of inflection). (Section 4.5)
Ex3	○☐	DA4b*	I can apply the First Derivative Test and Second Derivative Test to locate local extrema. (Section 4.5)
Ex3	○☐	DA.5	I can solve related rates problems. (Section 4.1)
WebWork only			I can solve optimization problems. (Section 4.7)

Chapter 5: I can calculate and explain the meaning of *integrals.*

	PLTL worksheet not graded	FTC.1	I can compute anti-derivatives correctly using the constant, constant multiple, sum and difference rules of basic power functions, trigonometric, and exponential functions. (Section 4.10)
Ex4	○☐	FTC.2	I can use antidifferentiation to solve initial-value problems. (Section 4.10)
Ex4	○☐	FTC.3*	I can evaluate definite integrals exactly by using the properties of definite integrals, graphs and geometry. (Section 5.2)
	○	FTC.4	I can estimate the values of definite integrals numerically using the left-hand sum or the right-hand sum. (Section 5.1)
Ex4	○☐	FTC.5*	I can evaluate definite integrals exactly by using the Fundamental Theorem of Calculus (FTC) part 2 with an antiderivative. (Section 5.3)
	○	FTC.6	I can interpret the physical meaning of a definite integral in terms of net area, net change, displacement, or distance, and state its units. (Section 5.4)
Ex4	○☐	FTC.8	I can evaluate integrals using the Substitution Rule using definite and indefinite integrals. (Sections 5.5 and 5.6)

# of LTs		Learning Targets CORE LTs + Supplementary LTs
4	Exam 1	L1 L2 L3 DM1
4	Exam 2	DS2 DS3 DS4 DA1
5	Exam 3	DM5 DA2 DA4a DA4b DA5
4	Exam 4	FTC2 FTC3 FTC5 FTC8

Semester Grade	Core Learning Targets (out of 9)	Supplementary Learning Targets (out of 8)	Non-testing Learning Targets (out of 6)	WebWork (avg total grade)
A	9	≥ 8	5	≥ 85%
B	9	≥ 5	4	≥ 75%
C	9	≥ 3	3	≥ 65%
D	10 of any Core/Supplementary			≥ 50%
F	Have not fully completed any of the above rows.			

WeBWorK Homeworks associated with the Learning Targets

In order to reassess Learning Targets during Carnival Days, the respective WeBWorK homework assignments must be completed. Core LTs are bold-faced in red (which must be met) while the remaining are Supplementary LTs (in green) or Non-testing LTs (in black).

WeBWorK HW		
2.2	**L.1***	I can evaluate a limit graphically or numerically including one-sided and infinite limits. (Sections 2.2 and 4.6)
2.3, 2.3b, 2.2b, 4.6	**L.2***	I can evaluate a limit analytically (using algebra), including one-sided and infinite limits. (Section 2.3; 4.6)
2.4	**L.3**	I can recognize points at which a function is (and is not) continuous and can use continuity to evaluate limits. (Section 2.4)
4.8	L.5	I can identify limits in indeterminate form and can apply L'Hopital's rule correctly. (Section 4.8)

WeBWorK HW		
3.1	**DM.1**	I can apply the limit definition of the derivative and calculate the derivative at a point. (Section 3.1)
3.1b	DM.2	I can calculate and interpret instantaneous rates of change at a point using graphs and tables, and I can understand the difference between the instantaneous rate of change and the average rate of change. (Sections 3.1 and 3.2)
3.2, 3.2a	DM.4	I can sketch the derivative function from the graph of a given function and determine any points of non-differentiability (specifically f' from f). (Section 3.2)
4.2	**DM.5***	I can find the tangent line to a function at a given point and use this line to approximate function values. (Section 3.1)

WeBWorK HW		
3.3, 3.3b, 3.3c	**DS.2***	I can use the Product and Quotient Rules to compute derivatives of simple algebraic, trigonometric, exponential, and logarithmic functions in combination. (Sections 3.3, 3.5, 3.9)
3.6	**DS.3***	I can use the Chain Rule to compute derivatives of simple algebraic, trigonometric, exponential, and logarithmic functions in combination. (Sec 3.6)
3.6b	**DS.4**	I can use a combination of the Product, Quotient, and Chain Rules to compute derivatives of simple algebraic, trigonometric, exponential, and logarithmic functions in combination. (Sections 3.5, 3.6, 3.9)
3.8	DS.5	I can compute derivatives correctly using implicit differentiation. (Sec 3.8)
		I can compute derivatives correctly using logarithmic differentiation. (Sec 3.9)

WeBWorK HW		
3.4	**DA.1**	I can correctly interpret the meaning of a derivative in context (e.g. velocity, acceleration). (Section 3.4)
4.3	**DA.2***	I can use the Extreme Value Theorem to find absolute extrema of functions. (Sections 4.3 and 4.5)
4.5	**DA4a**	I can explain the relationship between a function and its first and second derivatives (concavity, increasing/decreasing, points of inflection). (Section 4.5)
4.5b	**DA4b***	I can apply the First Derivative Test and Second Derivative Test to locate local extrema. (Section 4.5)
4.1	**DA.5**	I can solve related rates problems. (Section 4.1)
4.7		I can solve optimization problems. (Section 4.7)

WeBWorK HW		
4.10	FTC.1	I can compute anti-derivatives correctly using the constant, constant multiple, sum and difference rules of basic power functions, trigonometric, and exponential functions. (Section 4.10)
4.10	**FTC.2**	I can use antidifferentiation to solve initial-value problems. (Section 4.10)
5.2	**FTC.3***	I can evaluate definite integrals exactly by using the properties of definite integrals, graphs and geometry. (Section 5.2)
5.1	FTC.4	I can estimate the values of definite integrals numerically using the left-hand sum or the right-hand sum. (Section 5.1)
5.3	**FTC.5***	I can evaluate definite integrals exactly by using the Fundamental Theorem of Calculus (FTC) part 2 with an antiderivative. (Section 5.3)
5.4	FTC.6	I can interpret the physical meaning of a definite integral in terms of net area, net change, displacement, or distance, and state its units. (Section 5.4)
5.5, 5.6	**FTC.8**	I can evaluate integrals using the Substitution Rule using definite and indefinite integrals. (Sections 5.5 and 5.6)