Practice Problems for MATH 1131

An important part of learning calculus is to practice solving problems correctly and to learn to explain your solutions clearly to another person. Simply doing the graded assignments will not give you enough experience or variety to fully develop these abilities. The problems below have been carefully selected to give you a variety of good questions, which you can use to build your comfort with and understanding of Calculus.

You can find the **answers to odd numbered exercises** in Appendix I of the textbook. You can find this in the eBook using the Table of Contents, or by going to page A65. I can give detailed answers in person.

Note: The page numbers refer to the hardcover edition of Stewart's *Calculus, Early Transcendentals* 7E. If you have the hybrid book, you must use the eBook to see the end of section problems. You can access the online textbook by logging into WebAssign and selecting "My Books" in the toolbar at the top of the page.

General Review: Study Appendices A, B, C, and D

Problem Solving: Read pg xxii-xiii and pg 75-76,78.

Section 1.1-2: Review of Functions and Representing functions.
    pg 19 #1-4, 7-13, 25, 27-56 and pg 33 #3-4, 6-8, 10-13, 19-20

Section 1.3, 1.5: Modifying functions, and Exponential functions.
    pg 42 #3-5, 8-11, 29-46, 50, 53-56(!), 60 and pg 57 #1-5, 7-17, 19-20, 24, 26-27, 29-30

Section 1.5: Inverses and logarithms.
    pg 69 #1-2, 5-15, 18-19, 21-26, 29-41, 43-44, and 49-56

Section 2.1: The first big idea: tangents and velocity.
    pg 86 #1-2, 5-7

Section 2.2: Defining the limit of a function.
    pg 96 #1-12, 15-18, and 29-37

Section 2.3: Computing limits.
    pg 106 #1-31, 35-40, 47-48, 55-56, 60-61

Section 2.4: Defining limits precisely.
    pg 116 #1-4, 11, 13-18, 23-27 38-39, 41-43

Section 2.5: Continuity.
    pg 127 #1-27, 31, 33, 35-37, 39-44, 48, 51-54, 69 (extra fun: 59-61)

Section 2.6: Limits at infinity and horizontal asymptotes.
    pg 140 #1-18, 21-24, 28-29, 31-33, 37-38, 41-44, 52-53, 62

Section 2.7: Derivatives and rates of change.
    pg 150 #1-8, 11-14, 17-21, 27, 33-38, 45, 47-48

Section 2.8: The derivative as a function.
    pg 162 #1-14, 16-18, 21-22, 37-40, 42-43, 45, 47, 53-54

Section 3.1: Derivatives of basic functions.
    pg 181 #1-14, 16, 18-20, 22-26, 32-49, 51-52, 62

Section 3.2: The product and quotient rules.
　　pg 189 #1-9, 12-16, 21-23, 26-30, 33-40, 43-45

Section 3.3: Derivatives of trig functions.
　　pg 197 #1-12, 17-29, 35, 37-41, 49-50

Section 3.7: Applications: rates of change.
　　pg 233 #1-2, 5-10

Section 3.4: The Chain Rule.
　　pg 205 #1-16, 21-25, 28-29, 40-41, 47-56, 61-64, 71-74

Section 3.5: Implicit differentiation.
　　pg 215 #1-2, 5-8, 10-16, 25-28, 30-39, 48(!), 49-51, 55, 58

Section 3.6: Derivatives of logarithms.
　　pg 223 #2-15, 23-24, 33-36, 39-50

Section 3.8: Exponential growth and decay.
　　pg 242 #1-11

Section 3.9: Related Rates.
　　pg 248 #1-6, 11-17, 20-21, 23-27

Section 3.10: Linear approximation via derivatives.
　　pg 255 #1-10, 15-28, 32-37, 40, 42

Section 4.1,2: Maxima, minima, and mean value.
　　pg 280 #1-14, 16-24,26, 29-33, 35-39, 43-44, 47-56, 59-62

Section 4.3: How derivatives affect graph shape.
　　pg 297 #1-6, 8-13, 17, 19-25, 29, 33-34, 38, 44-46, 49, 61, 66

Section 4.4: L'Hopital's Rule.
　　pg 307 #1-4, 7-22, 25, 30, 41-43, 45-46, 49-52, 55, 57-59, 71-72

Section 4.7: Optimizing.
　　pg 331 #2-14, 46-7, 49-50

Section 4.9: Antiderivatives.
　　pg 348 #1-6, 9-17, 20-21, 25-29, 59-62, 66, 71

Section 5.1: Approximating areas under curves.
　　pg 369 #1-5, 13-16, 19-21, 30

Section 5.2: Definite Integrals.
　　pg 383 #1-12, 17-20, 33, 35-36, 39-40, 43, 47-49, 52

Section 5.3: The most important theorem in calculus.
　　pg 394 #3, 7-10, 13-16, 19-27, 31-35, 45-48

Section 5.4: Using the fundamental theorem.
　　pg 403 #1, 3-12, 19-30, 33-35, 37, 49, 51-56

Section 5.5: The substitution rule.
　　pg 413 #1-10, 13-18, 20-22, 25-30, 32-33, 45, 49, 51-57, 59-60, 63-65, 69-70

Section 1.1-3.3: Review Part I: Foundations of Calculus.

Section 3.4-4.9: Review Part II: Computing and using derivatives.

Section 5.1-5.5: Review Part III: Computing areas.