Unit 1: The Limit

Day (corresponding to lecture)

1. **Section 2.2** Limits Numerically and Graphically:
   - Limits Numerically: #5, 7, 9, 15, 19, 21
   - Limits Graphically: 23-34 (all)
   - Sketch graph from a description: 35, 36
   - True/False: 75, 77, 78
2. **Section 2.3** Limits Analytically:
   - Simple Limits: #7, 11, 13, 17, 25, 27, 29, 31, 33, 35
   - Limit properties: 37, 39
   - Analytic Limits requiring more work: 41-59 (odd), 104
   - Limits 3 ways: #81
   - Analytic limits using the special trig limits (Thm 2.9): #**65-75 (all)**
   - Squeeze Theorem to find limits: 95, 97, 99
   - Velocity and Limits: 105
   - True/false: 77, 79, 119-123 (all)
3. **Section 2.4** Continuity:
   - Left- and Right-hand limits #13, 15, 17, 19, 21
   - Continuity Graphically: #7, 9, 33, 36
   - Discontinuities (Removable/Nonremovable) #41-57(odd), 108
   - Find parameter for continuity: #61,63, 65
   - Properties of Continuity: #67
   - Continuity of functions: #37, 75, 77
   - Intermediate Value Theorem: #83, 85
   - True/False: #109, 110, 111
4. **Section 2.5** Infinite Limits:
   - Infinite Limits Graphically: #3
   - Left/Right Infinite Limits Analytically: #7, 9, 37, 39, 41, 43, 45, 47, 49
   - Left/Right Infinite Limits Graphically/Numerically: #13
   - Vertical Asymptotes: #17, 19, 23, 27, 29, 31, 33-36
   - Infinite Limits Properties (Thm. 2.15) #55
   - True/False and Conceptual understanding: #57, 67-70 (all)
5. **Section 4.5** Limits at Infinity:
   - Graphical interpretation and understanding: #1, 2, 3, 4, 59
   - Analytically (using Thm 4.10): #11, 13, 15, 17, 19, 21, 23, 25, 31, 33, 35, 37, 39, 41, 49, 51
   - Graphically: #43, 59
   - An application: #63
6. **Section 2.2** The Definition of Limit with Epsilon proof: #37, 39, 41, 43, 47, 49
7. **Section 3.1** The Derivative with Limits:
   - Limit Process for finding derivative: #15-27 (odd)
   - Finding the Slope of a Tangent Line: #9,11
   - Find equation of a tangent line parallel to a given line: #37
8. **Section 3.1** The Derivative with Limits:
   - Sketching a Derivative: #43,45, 47, 48
   - Determining Differentiability Graphically : #77, 78, 79, 80, 85
   - Concepts and True/False: #93-96
9. **Review: See Big Limits Handout**
