Topics and Concepts

1. Continuity
2. Limits at infinity and horizontal asymptotes
3. Using the limit definition of the derivative
4. Derivative at a point and tangent lines
5. Differentiability (Not differentiable at discontinuities, cusps/corners, and vertical tangent lines)
6. Higher derivatives
7. Derivatives of sums and constant multiples
8. Derivative of $e^x$
9. Derivative formulas (power rule, product rule, quotient rule)
10. Derivatives of trigonometric functions

Here are some selected problems that you can use as a guide for what to work on:

Chapter 2 Review Exercises (pp 167 - 168): # 13, 14, 16, 17, 18, 35, 39a-b, 47, 48
Chapter 3 Review Exercises (pp 265 - 266): # 2, 3, 4, 7, 23, 51, 61, 85

Solutions to even numbered exercises:

Chapter 2 Review: 14. $-\frac{1}{2}$, 16. $\frac{1}{3}$, 18. 0, 48. a is $f$, b is $f''$, c is $f'$ (be careful with the labels, I got them confused at first)
Chapter 3 Review: 2. $y' = -\frac{1}{2}x^{-3/2} + \frac{3}{5}x^{-8/5}$, 4. $y' = \frac{(1+\cos x)\sec^2 x - \tan x(-\sin x)}{(1+\cos x)^2}$,