1. Reading materials:
   Textbook - Page 180-186
   (1) Product Rule and Quotient Rule: Theorem 4.1 and Theorem 4.2.
   (2) Examples 4.1-4.3
   (3) Examples given in lecture notes.
   (4) Notes on the derivative of \( f(x)^n \).

2. Complete the following differentiation rules:
   \[
   \frac{d}{dx} [f(x)g(x)] = \]
   \[
   \frac{d}{dx} \left( \frac{f(x)}{g(x)} \right) = \]
   \[
   \frac{d}{dx} [f(x)g(x)h(x)] = \]
   \[
   \frac{d}{dx} [f(x)^n] = \]
   \[
   \frac{d}{dx} [x^2f(x)] = \]
   \[
   \frac{d}{dx} \left( \frac{x^2}{f(x)} \right) = \]

3. Page 186: turn in the ones with *
   For all derivatives, use only the differentiation rules introduced in Section 2.3-2.4 or covered in class.
   1-16. 4*, 8*, 16*
   19, 20*, 21, 22(a)*, 23(a)*
   Extra points: 18, 24, 50, 52

4. Page 194: turn in the ones with *
   For all derivatives, use only the differentiation rules introduced in Section 2.3-2.4 or covered in class.
   6*, 12*