Exercise 4 (Assignment 2)

- **Due date: Monday, October 7**
- **How to submit:**

  Method 1 Submit to your TA in person before tutorial starts.
  Method 2 Submit through submission box. **Deadline for Method 2: 5pm**

- **Details of submission box:**

  Submission Box#2 (Labeled **ECON2174**)
  6th floor of LSKbuilding, next to Lifts 3&4 (the two lifts close to the cafeteria)

Exercise 4 (Assignment 2) Questions

1. Let $f \in C^2$(with derivatives f' and f'') and $g(x,y) = f(x+y)$, find $g'_x, g'_y, g''_{xx}, g''_{xy}, g''_{yy}$
2. Let $f \in C^2$ (with derivatives f' and f'') and $g(x,y) = f(xy)$, find $g'_x, g'_y, g''_{xx}, g''_{xy}, g''_{yy}$
3. Let $f \in C^2$ be function of two variables (with partial derivatives $f'_1, f'_2, f''_{11}, f''_{12}, f''_{22}$) and $g(x,y) = f(x+y, x-y)$, find $g'_x, g'_y, g''_{xx}, g''_{xy}, g''_{yy}$
4. Let $f \in C^2$ and $z = f(x,y)$, where $x = a + bt, y = c + dt$, find $\frac{dz}{dt}$ and $\frac{d^2z}{dt^2}$
5. Questions from textbook:

Page #	Exercise #	Question #
189	8.3	2a, 3
193	8.4	1a, 1b, 2b, 2c