EconS 501 - Micro Theory I
Assignment #4 - Due date: October 17th, in class.

1. **Two factories.** A producer can use two factories, 1 and 2, to produce units of the same good. The production function of factory 1 is $q = \sqrt{z_1}$ and that of factory 2 is $q = \sqrt{z_2}$, where z_i denotes the amount of input used in factory $i = \{1, 2\}$. The price of each unit of input is 1, for both z_1 and z_2, and the cost of activating a factory is $k > 0$. Find this producer's cost function.

2. **A producer with a cost of firing workers.** A producer uses one input, workers, to produce output according to a production function f. She has already hired z_0 workers. She can fire some or all of them, or hire more workers. The wage of a worker is $w > 0$ and the price of output is $p > 0$.

   Compare the producer's behavior if she maximizes profit to her behavior if she also takes into account that firing workers causes her to fell as if she bears the cost $L > 0$ per fired worker.

3. **Exercises from FMG (Chapter 6):**

   (a) Exercise 4, 8, 16, and 24.