Assessment 4: 9PM-11PM Test
Questions and Solutions

Q1. [25 points] Assume that the ceramic coffee cup market is perfectly competitive. BCC is one of the many identical firms producing coffee cups. They own the clay (it is on their land). They rent the factory where they produce cups using clay and labour. They pay market prices for the factory and labour.

a. [7 points] Explain how to calculate BCC's Marginal Cost for the 1,000th cup. Be clear about any assumptions you are making.

Solution: The factory rent does not vary with output so it is a fixed cost and doesn't affect MC. It is reasonable to assume that the firm will need to increase the number of workers and clay as the number of cups increases. The marginal cost of the 1000th cup is the extra labour and clay needed to make that cup. Labour is rented so they opportunity cost is the wage rate and we would need to figure out exactly how many minutes (or hours) of labour we need to produce that cup and multiply it by the wage rate. Alternatively you could calculate $\frac{w}{MP_l}$. The clay is owned by BCC, but the opportunity cost is the price the firm would have received if it had sold it to another company, i.e. the market price of clay. In the same way we figure out exactly how much extra clay we need for the 1000th cup and its cost. Add the two and you have MC for the cup.

b. [10 points] Assume i) the market price for clay increases; and ii) BCC pays higher rent for factory upgrades that allow each worker to produce more cups than they did before. How do these changes affect BCC's long-run