MGEC02 - TOPIC 3 - Homework

3.1 different types of competition for duopolists with homogeneous products

Consider a small northern community with two grocery stores Able Produce (a) and Baker Produce (b). The products of the two firms are practically identical. The market demand is $P = 43 – 4Q$, where Q is in thousands of bags of groceries per month and P is in dollars per bag. The firms' cost functions are $Ca = Qa^2 - Qa$ and $Cb = 2Qb^2 - Qb$ in thousands of dollars per month.

(a) If the two firms behaved as perfect competitors, what would be their outputs, the market price, and their profits?

(b) If the two firms behaved as Cournot competitors, what would be their outputs, the market price, and their profits?

(c) If Able acted as a Stackelberg market leader (since it has greater power due to its lower cost structure, i.e. it has the ability to undercut prices and punish Baker if Baker steps out of line), what would be their outputs, the market price, and their profits?

(d) If the two firms decided to collude and operate as a cartel, sharing the profits equally, what would be their outputs, the market price, and each of their profits?

(e) What type of competition do you think is most likely?