Sample Problems

Suppose that the (inverse) market demand for fax paper is given by

P = 400 - 2Q

Where Q is total industry output. There are two firms that produce fax paper. Each firm has a constant marginal cost of production equal to $40 and they are competing in quantities. That is, they each choose production levels simultaneously.

Calculate the best response function for each firm (i.e. each firm’s profit maximizing choice of quantity given the other firm’s production levels)

1) p = 140 - (Q1+Q2) (industry demand).

2) TC1 = 20Q1 (total cost of firm 1)

3) TC2 = 20Q2 (total cost of firm 2)

Observe that the industry price, equation 1, depends on the output of both firms. This feature has two implications: a) since the profits of each firm depend on the price, they depend on the choice of the competitor (strategic interaction), b) in order to establish profit maximizing decisions, each firm has to guess what the competitor will do.