

Do not write your name on the assignment. Write your name only on the back of this sheet of paper and staple your answers on the front of this sheet of paper. Failure to follow these directions will cost you 1 point on the assignment.

For all questions, show all work. You will not get credit for an answer given without the work.

1) I have tested these numbers for the Cournot model. Unless I made a mathematical mistake (which you know I never do), the numbers work nicely. However, that means that the Von Stackleberg quantities will not be nice numbers.

A) (40 points) Find the equilibrium outputs for the two Cournot firms if they face demand curves given by  $P = 8 - 2(Q_1 + Q_2)$ . Both cost curves are given by  $TC = Q + Q^2/2$ . Find the quantities the firms produce, the prices they charge, and their profits.

B) (35 points) Find the Von Stackleberg equilibrium levels of output for the two firms, the price the industry charges, and the profits of the two firms.

C) (15 points) In which model does the leading firm make more money? What is the economic reason for this?

D) (5 points) In which model does the following firm make more money? What is the economic reason for this?

E) (5 points) In which model is the consumer happier? What is the economic reason for this?