

Ec306 Homework 6

1. Some newspapers are willing to pay students to be interns, while some students are willing to pay to be interns at newspapers. The inverse demand by newspapers for interns is given by $p = 100 - 2q$, while the inverse demand by students to be interns is $p = 50 - q$. All students and newspapers are otherwise identical. In a competitive equilibrium for interns,
 - a Students will pay newspapers \$25 each to be interns.
 - b Students will pay newspapers \$10 each to be interns.
 - c Interns will work for free, and won't pay to be interns.
 - d Newspapers will pay students \$10 each for being an intern.
 - e Newspapers will pay students \$25 each for being an intern.
2. According to the First Theorem of Welfare Economics:
 - a Every competitive equilibrium is fair.
 - b If the economy is in a competitive equilibrium, there is no way to make anyone better off.
 - c A competitive equilibrium always exists.
 - d At a Pareto optimum, all consumers must be equally wealthy.
 - e None of the above.
3. Big Pig and Little Pig have two possible strategies, Press the Button, and Wait at the trough. If both pigs choose Wait, both get 2. If both pigs press the button then Big Pig gets 7 and Little Pig gets 3. If Little Pig presses the button and Big Pig waits at the trough, then Big Pig gets 10 and Little Pig gets 0. Finally, if Big Pig presses the button and Little Pig waits, then Big Pig gets 6 and Little Pig gets 1. In Nash equilibrium,
 - a Little Pig will get a payoff of 1 and Big Pig will get a payoff of 6.
 - b Little Pig will get a payoff of 3 and Big Pig will get a payoff of 7.
 - c Both pigs will wait at the trough.
 - d Little pig will get a payoff of zero.
 - e The pigs must use mixed strategies, since there are no pure strategy equilibria.

4. In a certain town, the inverse demand by homeowners for lawnmowers is $p = 100 - q$. This demand does not take into account these externalities per lawnmower used: a \$10 cost on neighbors due to noise, a \$5 cost on the town in added air pollution, and a \$40 benefit neighbors and passers-by enjoy from more attractive lawns. The inverse supply for lawnmowers is $p = q$, which does not take into account a pollution cost of \$5 per lawnmower imposed on those who live near the factory. Which of the following policies makes social welfare the highest?
- a A noise tax of \$10 per lawnmower, paid by homeowners.
 - b A pollution tax of \$15 per lawnmower made, paid by the manufacturer.
 - c A subsidy of \$20 per lawnmower sold, given to the manufacturer.
 - d A neighborhood beautification tax credit of \$40 per lawnmower, given to homeowners.
 - e No taxes or subsidies.
5. Joe, Hal, Sue, and Ann share an apartment and a TV together. They each have the same monthly inverse demand for cable channels, namely $p = 1.5 - q/100$, where q is the number of cable channels they subscribe to together. If cable channels cost \$1 each per month, the number of channels they will subscribe to together is:
- a 0
 - b 25
 - c 50
 - d 125
 - e 200
6. A monopolist has a constant marginal cost of \$2 per unit and no fixed costs. He faces separate markets in the U.S. and England. He can set one price p_1 for the American market and another price p_2 for the English market. If demand in the U.S. is given by $Q_1 = 6,400 - 800p_1$, and demand in England is given by $Q_2 = 6,400 - 400p_2$, then the price in America will:
- a be larger than the price in England by 4.
 - b be smaller than the price in England by 4.
 - c equal the price in England.
 - d be larger than the price in England by 6.
 - e be smaller than the price in England by 6.

This homework is due in class Thurs. Dec 2. Please show your reasoning along with your answers.