AS/ECON 4080      Mid–term Exam      February 8 2006

time : 50 minutes

Do all 3 questions. All count equally.

1. Suppose that good $X$ is a pure private good, and that good $Z$ is a **non–rival** good which is also completely **excludable** at zero cost. Discuss the conditions for efficiency in an economy with these 2 goods.

2. How much tax revenue would be collected by a "pivot tax" mechanism, which induced people to reveal their preferences truthfully, in the following situation?

The indivisible ("all or nothing") public project costs \$1000. There are 5 people ; 3 people value the project at \$300 each, and 2 people value the project at \$30 each. The project will be undertaken if and only if the sum of people's announced valuations exceeds the cost of the project, \$1000. If the project is undertaken, each person will pay the same share, \$200, of the cost. In addition, if any person is "pivotal" (that is, if her valuation alters the overall result), then she will have to pay a pivot tax, equal to the (absolute value of the) difference between the sum everyone else's announced valuations and the sum of the shares of the cost which they must pay.

3. What government action, if any, would be needed if firm $A$ and $B$ share access to the same harbour for shipping, and if firm $A$'s own investment in improvements to the port facilities also benefitted firm $B$?