

Place your name on the back of this sheet of paper and nowhere else. Staple your answers face up on the front of this sheet of paper. Failure to follow these directions will cost you 1 point. Your assignment will be typed, except graphs can be drawn by hand and mathematical equations can be done by hand. Failure to type it will cost you 10 points. If you use double-sided printing or print on the back of scrap paper, I will give you one additional point.

1) (25 points) Draw the supply and demand for a product like oil which creates a negative externality. Prove the market will not supply the optimal quantity of oil at the optimal price. What do economists say is the best way to fix the problem? Illustrate the effects of that on the graph. Explain why the curve(s) moved as drawn and prove that the market is now at the socially optimal point.

2) (15 points each) For each of the following economic reasons for a government, give the reason why economists say this requires a government. Type each answer in separate paragraphs.

A) Provide a legal system

B) Public goods. (Make sure you define them.)

3) (25 points) Suppose a project will hurt a thousand people \$1 each, but will help one person \$3000. Will voting or the market give the optimal outcome? Explain your logic. Suppose a second project will hurt a thousand people \$20 each, but will help one person \$4000. Will voting or the market give the optimal outcome? Explain your logic.

4) (20 points) Suppose a person has an income of \$100,000 and the tax brackets are given below. Find that person's marginal tax rate, total taxes paid, and average tax rate. Show all work and briefly explain what you did. If there is no work to show, state how you found the answer.

Income Bracket	Tax Rate
\$0 - \$20,000	10%
\$20,000 - \$50,000	20%
\$50,000 - \$90,000	25%
\$90,000 - \$150,000	30%
>\$150,000	40%