

Do NOT write your name anywhere. (Canvas will tell me who turned in the assignment.) All answers must be typed, except for mathematics and graphs. Take pictures of your written answers and use your own software or to create a single PDF size A4 or 8.5" x 11". At the top of my [webpage](#), I list several online sources which will convert pictures to pdfs, merge pdfs, and resize them. However, Apple phones may require using [CamScanner](#) before using the online sources. Failure to follow these directions will cost you 10 points.

1) (25 points) Draw the supply and demand for a product like gasoline which causes a negative externality. Explain how your diagram proves we will not have the socially optimal level of production of gasoline. What do economists feel is the best way to reduce this problem? Illustrate the effects of that on the graph. Explain why the curve(s) moved as drawn.

2) (25 points) What are public goods? Why do they require government intervention in the market? A lot of textbooks list police as a public good. Prove they are not.

3) (10 points) Why is providing a legal system an economic reason for government?

4) (20 points) Suppose that a project costs \$3000. If completed, it would allow the firm to sell 1 item to each of 400 people at a profit of \$9 per item. There is a negative externality which affects 300 people at a cost of \$3 per person. Should this project be done? Would the market provide it? Would the government provide it? Show all work for each calculation and briefly explain what you did.

5) (20 points) Suppose that a project costs \$4000. If completed, it would allow the firm to sell 1 item to each of 500 people at a profit of \$7 per item. There is a positive externality which affects 300 people at a benefit of \$2 per person. Should this project be done? Would the market provide it? Would the government provide it? Show all work for each calculation and briefly explain what you did.