

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 <https://pdfcandy.com/> to create a single PDF size A4. (pdfcandy.com will convert many file types to PDF, resize PDF, merge PDF and many other things for free. However, Apple phones may require using [CamScanner](#) before using pdfcandy.com.) Failure to follow these directions will cost you 10 points.

- 1) (20 points) Draw the S/D diagram for a product like gasoline which causes a negative externality. Prove that the market will not produce the socially optimal quantity. How do economists recommend we solve this problem? Illustrate the effects of that on the graph. Explain why the curve(s) moved as drawn.
- 2) (20 points) We said that public goods are a reason for government intervention in the market. Define public goods and explain why they require government intervention. Why aren't the police a public good?
- 3) (20 points) Suppose there is a project which will cost \$3000. It will enable the organization who does the project to sell 1 item to each of 900 people at \$4 profit per item. There is a negative externality which affects 400 people and it costs each of them \$2 each. Should the project be done? Explain your logic. Would the market provide it? Explain your logic. Would the government provide it? Explain your logic.
- 4) (20 points) Suppose there is a project which will cost \$7000. It will enable the organization who does the project to sell 1 item to each of 1000 people at \$5 profit per item. There is a positive externality which affects 800 people and it benefits each of them \$3 each. Should the project be done? Explain your logic. Would the market provide it? Explain your logic. Would the government provide it? Explain your logic.
- 5) (20 points) Suppose there is a project which will cost \$1500. It will enable the organization who does the project to sell 1 item to each of 700 people at \$4 profit per item. There is a negative externality which affects 900 people and it costs each of them \$1 each. Should the project be done? Explain your logic. Would the market provide it? Explain your logic. Would the government provide it? Explain your logic.