Coronavirus assignment

The purpose of this assignment is to get you to "think like an economist" about the economic logic of policy interventions related to the novel coronavirus. **Your task is to use the tools of the course to answer the questions below.** For each prompt, there is a specified word limit that you may not exceed. You will be evaluated on the quality of your reasoning and the degree to which you faithfully apply relevant concepts of the course to the hypotheticals listed below.

You may discuss this assignment with other students, ***but you must answer with language that is completely your own, so do not share any text/sentences/phrases with each other***.

Part 1—Vaccines against the coronavirus are currently in scarce supply. In the US, the vaccine is being given to people by priority tiers that depend on occupation and age. Some have argued that it would be more economically efficient to allocate the vaccine by willingness to pay.

Suppose that 80% of the vaccine continued to be distributed according to the current system, but the remaining 20% of the vaccine supply was separately allocated via an auction under which people could bid an amount that they would be willing to pay, and those vaccines would go to the people with the highest bids.

Prompt 1.a (150 word limit, 10 points) **Claim:** The 20% of vaccines distributed through auction would be allocated in an economically efficient manner from the point of view of society. **Evaluate this claim.**

Prompt 1.b (150 word limit, 10 points) Some worry that it would be unfair to allocate vaccines by auction because the rich might get all the vaccines. In response, others suggest that we could randomly allocate permits that give someone the right to get a vaccine as part of the 20% allocation, but they would be able to sell this permit to another person if they wanted. **Claim:** The vaccines allocated in this way would be allocated both efficiently and fairly. **Evaluate this claim.**

Part 2—In the US, mask wearing became a controversial issue among some groups of people. Consider the dilemma of an Uber driver transporting a passenger who doesn't want to wear a mask. Assume that Uber requires all drivers to wear masks, but they are debating option A (masks are mandatory for passengers) and option B (masks are voluntary for passengers).

(Note that, if the passenger has a strong enough willingness to pay to avoid wearing a mask during a given ride, then it is theoretically possible that the efficient outcome for society is for the passenger to not wear a mask.)

Prompt 2.a (75 word limit, 5 points) Suppose that Uber adopts a policy that masks are mandatory for passengers, but a passenger and a driver reach an agreement under which the passenger gives the driver an extra $5 tip in exchange for not wearing his/her mask. **Claim:** This deal represents a Pareto improvement for *society as a whole*. **Evaluate this claim.**

Prompt 2.b (75 word limit, 5 points) **Claim:** As long as the passenger and driver are able to make a side agreement that Uber cannot observe, we can expect them to reach the outcome that maximizes their own welfare regardless of which policy Uber chooses. **Evaluate this claim.**

Part 3—Suppose it were possible to map all COVID-19 infections, so that for every person infected, it is possible to determine the person who caused their infection. It would then be possible to levy a tax for infection caused at some tax rate *t.* For example, if Alice caused 8 people to become infected, she would have to pay the government 8**t.*

Prompt 3.a (100 word limit, 10 points) **Claim:** If we implemented that tax, at say t=500, this would lead to a cost effective mitigation of the spread of the coronavirus. **Evaluate this claim.**

Prompt 3.b (100 word limit, 10 points) **Claim:** Imposition of this hypothetical infection tax is not only cost effective, but also it would lead to the socially optimal (i.e., what the social planner would pick) allocation of economic activity and mitigation behavior, so long as the government could pick the best available tax rate. **Evaluate this claim.**

Prompt 3.c (100 word limit, 10 points) **Claim:** If a vaccine was widely distributed, the optimal infection tax rate *t* would be higher because it is more valuable to society to encourage mitigation when solutions are available. **Evaluate this claim.**