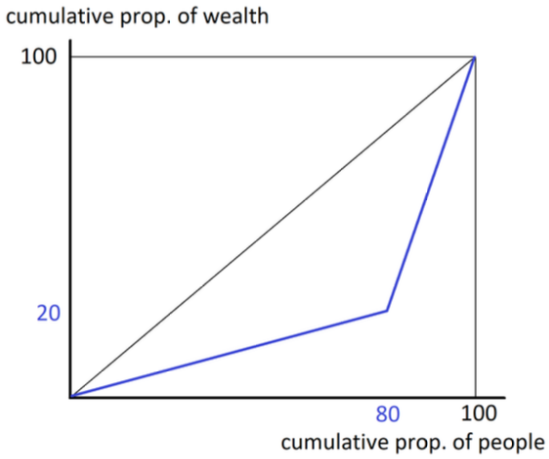
**Section Exercise 1**

1) Say that a society of 200 people has the following hypothetical Lorenz curve:




a) In words, give an example of a wealth distribution that would be consistent with this Lorenz curve—who has what amount of wealth?

b) Using the area method, calculate the Gini coefficient for wealth in this society. How does this compare to the 'typical' Gini coefficients for income we see around the world (e.g. in slide 42 of the topic 1 notes)? What's the difference between income and wealth?

2) In class we will discuss the idea of counterfactuals and the distinction between correlation and causation. A foundational question in the field of labor economics is: does having more years of education lead a person to earn a higher wage/salary? Understanding the answer to this

question could be useful to, for example, a policymaker who is considering whether to expand the number of years of public education in their community.

a) Say that we found that people with more education had higher earnings. Suggest a possible causal explanation for that finding, and then a different possible explanation that be only a correlation and not causal.

b) Carefully explain a counterfactual thought experiment that would help you to understand if the causal explanation was correct. What makes your thought experiment difficult to actually conduct in reality?

3) Let's say that we wanted to figure out the answer to the following question: if we changed the top marginal income tax rate, would the amount of hours that people work change?

a) Is this question positive or normative and why? What would be an example of a question on the same topic but of the other type?

b) Carefully explain what your ideal counterfactual would be to help you answer this question—even if it's totally unrealistic or infeasible!

4) Let's think about the distribution of land in two hypothetical societies.

   a) First, let's think about society A. It has 100 people, 80 of whom own 0.5 acres of land each, and 20 of whom own 2 acres of land each. The Gini coefficient in society A is 0.3. Sketch the Lorenz curve for land in society A. Explain how the Gini coefficient can be found from your diagram.

   b) Society B has 2,000 people, 1,600 of whom own 1 acre of land each, and 400 of whom own 4 acres of land each. Is the Gini coefficient for land in society B higher, lower, or the same as in society A? Explain your answer.

**Discussion prompts**

5) Can you ever observe a truly useful counterfactual in economics?

6) Is the level of inequality we live with today something that was inevitable? Does it matter to your answer if we're talking about wealth or income inequality?