Name: _____ SID #: _____

Econ 1: Spring 2012: U.C. Berkeley: Problem Set 1

Due at start of section following January 30 lecture

For this problem set, we will consider a toy economy with eight workers--Lucy, Ricky, Ethel, Fred, Chingachgook, Galla Placidia, Ibn Sina, and An Lushan--that produces two commodities: lattes (large, vanilla-caramel, half-caff, sweetened, made half with skim milk and half with half-and-half--all lattes are equivalent, and take the same time and skill to make), and yoga lessons.

In a shift the eight workers could each teach at most the following number of yoga lessons: An Lushan 8; Chingachgook 8; Ibn Sina 4; Galla Placidia 3; Lucy 1; Ethel 1; Ricky 1; Fred 0.

In a shift the eight workers could prepare at most the following number of lattes: Lucy 20; Chingachgook 20; Ibn Sina 12; Ethel 10, Ricky 10, Fred 5; An Lushan 3; Galla Placidia 2.

Workers can split shifts: spend half their time teaching yoga and teaching half their maximum number of lessons and the other half pulling lattes and making half their maximum number, etc.

All 8 workers want to work a full shift.

1. What is the largest number of yoga lessons that this economy could teach?

2. What is the largest number of lattes that this economy could make?

3. Suppose Joe Djugashvili comes along and--out of the goodness of his heart and his desire to serve the people--volunteers to take on the onerous labor of the head of Production Distribution Coordination and assign people to shifts and tasks. He grabs four workers at random and says “you are pulling lattes”. He tells the rest “you are teaching yoga classes”. What is the expected value of the number of yoga classes taught? What is the expected value of the number of lattes made?

4. Graph the Production-Possibility Frontier--the PPF--of this economy.

5. Louie von Mises comes along and says that Joe Djugashvili is a really lousy head of PDC. Is Louie right or wrong? Use the PPF you drew in (4) to motivate your answer.

6. How many yoga lessons could the economy produce and still produce as many lattes as Joe Djugashvili expected the economy he ran to produce in (4)?

7. How many lattes could the economy produce and still produce as many yoga lessons as Joe Djugashvili expected the economy he ran to produce in (4)?

8. Suppose that lattes sell for $4 each. What is the *opportunity cost* for each of the eight workers of putting them to work teaching an extra yoga lesson?

9. Suppose that all the students in a yoga lesson collectively pay $15 per lesson. What is the *opportunity cost* for each of the eight workers of putting them to work pulling an extra latte?

10. Suppose Joe is still head of PDC. Oskar Lange comes along bearing the results of your calculations from (8) and says that he has a plan by which the economy can produce more than the random-assignment economy of (3). In what order does he tell Joe to pick the people who are going to teach the yoga lessons?

11. What is the relationship between your answer to (10) and your answer to (4). Is Louie now happy (or at least less unhappy)?

12. Suppose customers are willing to pay $4 each for lattes and $15 for yoga lessons. Who should Joe assign to teach yoga? To pull lattes? How many lattes will the economy make and how many yoga lessons will it teach?

13. Suppose customers are willing to pay $4 each for lattes but only $5 for yoga lessons. Who should Joe assign to teach yoga? To pull lattes? How many lattes will the economy make and how many yoga lessons will it teach?

14. Suppose customers are willing to pay $4 each for lattes and $45 for yoga lessons. Who should Joe assign to teach yoga? To pull lattes? How many lattes will the economy make and how many yoga lessons will it teach?

15. Which economy--(3), (12), (13), or (14)--is the worst economy? Why?

16. Which economy--(3), (12), (13), or (14)--is the best economy? Why?

17. Suppose that the price of lattes is $4 each. Let the price of yoga lessons vary from $0 to $100, and draw the supply curve for yoga lessons.

18. Suppose that the price of lattes is $2 each. Let the price of yoga lessons vary from $0 to $100, and draw the supply curve for yoga lessons.

19. Why is your supply curve in (17) different from your supply curve in (18)?

20. Suppose that the price of yoga lessons is $20 each. Let the price of lattes vary from $0 to $40, and draw the supply curve for lattes.

21. Suppose that the price of yoga lessons is $10 each. Let the price of lattes vary from $0 to $40, and draw the supply curve for lattes.

22. Why is your supply curve in (20) different from your supply curve in (21)?

23. For the supply curve you drew in (18), suppose consumers demand 22 yoga lessons. What is the equilibrium price of yoga lessons?

24. For the supply curve you drew in (18), suppose consumers demand 12 yoga lessons. What is the equilibrium price of yoga lessons?

25. For the supply curve you drew in (18), suppose consumers are willing to pay $22 for yoga lessons. What is the equilibrium quantity of yoga lessons?

26. For the supply curve you drew in (18), suppose consumers are willing to pay $4 for yoga lessons. What is the equilibrium quantity of yoga lessons?