

## **Econ 2: Spring 2014: U.C. Berkeley: Problem Set 1**

**Due at start of February 3 lecture**

1) For this problem set, consider a toy economy with six producing workers—Arya, Bran, Tegan, Taylor, Sarah, and Zedd—that produces two commodities: lattes (large, vanilla-caramel, half-caf, sweetened, made half with skim milk and half with half-and-half), and yoga lessons.

In an hour the six workers could each teach at most the following number of yoga students: Arya 10; Bran 6; Tegan 4; Taylor 4; Sarah 2; and Zedd 0. In an hour the six workers could prepare at most the following number of lattes: Arya 60; Bran 10; Tegan 20; Taylor 30; Sarah 30; and Zedd 60.

a. What is the largest number of yoga students that this economy could teach in an hour?

b. What is the largest number of lattes that this economy could make in an hour?

c. Suppose that some central planner—Mao Zedong, say—grabs three people at random and says “you are making lattes” and tells the other three “you are teaching yoga students”. How many lattes do you expect Mao’s allocation to make in an hour? How many yoga students do you expect Mao’s allocation to teach in an hour?

d. Is that the best the economy can do? If so, explain why. If not, propose an alternative assignment of workers to jobs and demonstrate that it is better. Is your alternative the best the economy can do? Explain why or why not.

2) For this problem, keep the same setup as problem 1—Arya, Bran, Tegan, Taylor, Sarah, and Zedd, with their productivities. But now we are going to introduce money: the £, the purchasing power of which the government sets so that £1

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purchases one latte. And let us call the price paid to the yoga instructor by each yoga student £Y.

a. Suppose that the price of a yoga lesson is £5.50. Who would rather teach yoga? Who would rather draw lattes?

b. Suppose the price of a yoga lesson is £10. Who would rather teach yoga? Who would rather draw lattes?

c. Suppose the price of a yoga lesson is £15. Who would rather teach yoga? Who would rather draw lattes?

d. With the price of yoga lessons along the vertical axis and the quantity of yoga students taught on the horizontal axis, draw the supply curve for yoga lessons for the economy.

e. Suppose that ten students want to and must take yoga lessons. What will the market equilibrium price of yoga lessons be?

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f. Suppose that every potential student is willing to pay £6 for a yoga lesson. What will the market equilibrium quantity of yoga lessons be?

g. Suppose that the price of a yoga lesson is £6. How much do each of the six workers make per hour/

h. Suppose that the price of a yoga lesson is £11. How much do each of the six workers make per hour/

i. Suppose that the price of a yoga lesson is £15. How much do each of the six workers make per hour/

j. Suppose that the price of a yoga lesson is £1. How much do each of the six workers make per hour/

3) For this problem, keep the same setup as problem 1—Arya, Bran, Tegan, Taylor, Sarah, and Zedd, with their productivities.

Go back to 1c. You have been unlucky, and it is now your job to convince Mao Zedong that he needs to let the market economy back into China. First, do some preliminary calculations...

a. Recall the amount of yoga students Mao's economy could teach and lattes it could make in an hour. If you allow the market system to work, what price of yoga lessons  $\$Y$  would have the economy teaching as many students as in Mao's economy? How many lattes would that market economy produce? How much better off would consumers be as a result?

b. Recall the amount of yoga students Mao's economy could teach and lattes it could make in an hour. Suppose you allow the market system to work. At what price of yoga lessons  $\$Y$  would the economy make as many lattes as in Mao's economy? How many yoga lessons would that market economy teach? How much better off would consumers be as a result?

c. Write (on the next page) a paragraph, 400 words at most, in which you make your argument to Mao Zedong that he should decontrol the Chinese economy and let it revert back to a market economy. For extra credit, in an appropriate and sensible place quote Deng Xiaoping: "It is not important whether a cat is red or white; it is important whether a cat catches mice!"

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d. What do you think Mao would say and do in answer to your attempt to convince him to reverse his economic policy course?