Economics 2 Professor Christina Romer
Spring 2019 Professor David Romer

PROBLEM SET 2

DUE AT THE *BEGINNING* OF LECTURE ON TUESDAY, FEBRUARY 19TH

You may work together on the problems, but your answers must be ***in your own words*** and ***handwritten***. You also must ***list the other students with whom you worked***.

For all questions be sure to explain your answers and to use graphs whenever appropriate.

1. Suppose that (perhaps because of lobbying by restaurant owners), the government switches from the current system, where taxes on restaurant meals are physically collected from sellers, to one where they are physically collected from buyers. Show that this change will have no effect on the quantity of restaurant meals, the after-tax amount received by sellers, the after-tax amount paid by buyers, the government's revenue, and the deadweight loss caused by the tax. (In answering the question, you can assume that the market for restaurant meals is perfectly competitive.)

2. Consider a household that buys two things: clothing and everything else.

- **a.** Draw the household's budget constraint, with clothing on the vertical axis and everything else on the horizontal axis. In terms of the household's income and the prices of clothing and everything else, what are the vertical intercept, the horizontal intercept, and the slope of the budget constraint?
- **b.** What is the condition for the household to be allocating its income in the way that maximizes utility? Explain in words the intuition behind the condition.
- **c.** Suppose droughts cause the price of cotton and other raw materials used in clothing to rise, and so cause the price of clothing to rise. How will the household need to modify its consumption of clothing and everything else to continue maximizing its utility? (Be sure to discuss both the substitution effect and the income effect of the price change.)
- **d.** Suppose the household starts socializing with more stylish friends and now feels awkward in its original wardrobe. How will the household need to modify its consumption of clothing and everything else to continue maximizing its utility? What will be the effect on its demand curve for clothing?

3. We saw that a firm's supply curve is the same as its marginal cost curve. Is a household's demand curve for a good the same as its marginal utility curve for the good (that is, a curve showing marginal utility as a function of the amount of the good it consumes)?

4. How would each of the following developments affect the amount produced by a typical clothing producer in the short run? (You can assume that the market for clothing is perfectly competitive.)

- **a.** Droughts cause the price of cotton and other raw materials used in clothing to rise.
- **b.** Due to the popularity of Marie Kondo's anti-clutter message, consumers reduce their purchases of clothing (at a given price).
- **c.** Improved technologies reduce the cost of providing security to clothing factories on nights and weekends, when they are not operating.

5. Consider a competitive industry. Suppose the government imposes a binding price floor (that is, a minimum price that is above the prevailing equilibrium price).

- **a.** How will the policy affect the amount a typical firm in the industry wants to supply? Will the firm necessarily be able to sell as much of the good as it wants to?
- **b.** Will the policy cause a deadweight loss?

6. Consider the market for avocados, which is very competitive. Suppose that initially the market is in long-run equilibrium, but that then someone comes up with the idea of making avocado toast, which spreads rapidly and becomes wildly popular.

- **a.** Show the situation in the market for avocados and the situation of a typical avocado producer before avocado toast becomes popular. What are the profits of the typical firm?
- **b.** How would the popularity of avocado toast affect the price and quantity of avocados in the short run? How would it affect the output and profits of a typical avocado producer?
- **c.** What would the introduction of avocado toast do to the equilibrium price and quantity of avocados in the long run? What would it do to the profits of a typical avocado producer in the long run?