1. The market for peanut butter in Muzha is monopolistically competitive and in long-run equilibrium. One day, consumer advocate Prof. Jack Wu discovers that all brands of peanut butter in Muzha are identical. Thereafter, the market becomes perfectly competitive and again reaches its long-run equilibrium. Using an appropriate diagram, explain whether each of the following variables increases, decreases, or stay the same for a “typical firm” in the market.

a. Price
b. Quantity
c. Average Total Cost
d. Marginal Cost
e. Profit

2. You and a classmate are assigned a project on which you will receive one combined grade. You each want to receive a good grade, but you also want to avoid hard work. In particular, here is the situation:

- If both of you work hard, you both get an A, which gives each of you 40 units of happiness.
- If only one of you works hard, you both get a B, which gives each of you 30 units of happiness.
- If neither of you works hard, you both get a D, which gives each of you 10 units of happiness.
- Working hard costs 25 units of happiness.

a. Draw a decision box for this circumstance and fill in the payoffs.
b. What is the likely outcome? Explain your answer in words.
c. If you get this classmate as your partner on a series of projects throughout the year, rather than only once, how might that change the outcome you predicted in the last question?
d. Another classmate cares more about good grades. She gets 50 units of happiness for a B, and 80 units of happiness for an A. If this classmate were your partner (but your preferences were unchanged), how would your answers to question (a) and (b) change? Which of the two classmates would you prefer as a partner? Would she also want you to be her partner? Explain.

3. Jim buys only milk and cookies.

a. In year 1, Jim earns $100, milk costs $2 per quart, and cookies costs $4 per dozen. Draw Jim’s budget constraint.
b. Now suppose that all prices increase by 10 percent and that Jim’s salary increases by 10 percent in year 2 as well. How would Jim’s budget constraint change? Will Jim’s optimal combination of milk and cookies in year 2 be the same as his optimal combination in year 1?

4. State whether each of the following statements is true or false. Then explain it graphically or in word.

a. “All Giffen goods are inferior goods.”
b. “All inferior goods are Giffen goods”
5. Consider your decision about how many hours to work.

a. Draw your budget constraint assuming that you pay no taxes on your income. Then draw another budget constraint on the same diagram assuming that you pay 15 percent tax.

b. Show how the tax might lead to more hours of work, fewer hours, or the same number of hours. Explain the reason why it leads to different results.