

# **End of Chapter Solutions**

## **Principles of Economics Second Edition**

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# Solutions to Chapter 1 Text Problems

## Questions for Review

1. If an instructor gave daily quizzes, most students would respond by reading the required readings more diligently and carefully. You would most likely read and study more than if there were no daily quizzes. This is an example of a negative incentive: Students are incentivized to study in order to avoid a negative consequence, in this case a bad grade.
2. Seniors often earn lower grades in the last semester before graduation because their incentives have changed. Before the last semester, most seniors are concerned about getting a job or perhaps getting into graduate school, both of which require high grades. Often, in the last semester of college, seniors have already been accepted into graduate programs or have already found a job. They no longer have the same incentives to maintain a high GPA. This means some seniors would prefer to spend less time studying and more time with their friends.

**Hints and Common Pitfalls:** Another useful way to think about this is to consider marginal costs and benefits. In the last semester of college, the marginal benefit of studying decreases—yes, you may get a higher grade, but that higher grade won't matter much for after-college plans. When the marginal benefit of studying decreases, you might decide to forgo studying for a different activity instead.

3. There are many possible answers to this question, depending on your individual situation, but all correct answers will have the following in common: The opportunity cost of reading this textbook is what you gave up in order to spend time reading the textbook. It's what you would have done had you *not* decided to read this textbook.

For example, suppose you took 30 minutes to read the first chapter and look through the questions. For some people, the opportunity cost of reading this chapter might be 30 extra minutes of sleep. For some, it's 30 minutes of socializing with friends. For others, the opportunity cost is the money they would have made working for 30 minutes instead.

**Hints and Common Pitfalls:** The opportunity cost of something is just the cost of the next most highly valued option. It's not the cost of *all* other options. For example, in the case of spending 30 minutes reading a textbook, it would

be incorrect to say that the opportunity cost is 30 minutes of sleep and 30 minutes of exercise. The opportunity cost is just the cost of the next-best option—either sleep or exercise.

4. This is not true. Trade creates value; both sides are better off as a result. Trade, unlike football, is not a zero-sum game.

Consider the following example. You and your friend go trick-or-treating. Your friend loves Reese's cups but doesn't care for M&Ms. In contrast, you really love M&Ms and don't really care for Reese's cups. If you trade one of your Reese's cups for one of your friend's M&Ms packets, you are both better off. In fact, you wouldn't bother to make the trade if you weren't made better off. Trade is not like football; in trade, both sides win.

## Study Problems

1. a. Because your tickets are worth more than you paid for them, you have a direct positive incentive to resell them.  
b. The "sales tax holiday" is a direct positive incentive to buy more clothes during the back-to-school period. An unintended consequence of this policy is that fewer purchases are likely to be made both before and after the tax holiday.
2. While specifics of the answer will vary, the average standard of living has gotten better over the past 25 years. This is in large part due to changes in technology. Technological shifts have made cars more efficient, computers cheaper, and information much easier to access (among other improvements). Today, most people in college own their own computer or laptop; this would have been unheard of 25 years ago.
3. Below are some examples. Your students' answers will almost surely be different; however, they should address the same core ideas.
  - Incentives matter: You decide to buy a \$20 item from a web site only to discover that spending another \$5 gets you free shipping. If shipping on the \$20 item is greater than \$5, you may find something else to buy for \$5, even if it is something you may not use. In this way, the web site is incentivizing people to spend more in order to have free shipping.
  - Life is about trade-offs: What if you want to adopt kittens from an animal shelter? Having

kittens would be a source of utility, as you would enjoy cuddling and playing with them. However, this would also mean extra work in feeding them, paying for their food and vet bills, and finding someone to watch them if you go on vacation.

- Opportunity cost: Should you go on a cruise with friends instead of going on a service trip with Alternative Spring Break? By making the choice of going on the cruise, you give up your next best option, which is going on a service trip with Alternative Spring Break. This service trip was the opportunity cost of going on the cruise.
  - Marginal thinking: After a large dinner, you may or may not have dessert. You can compare the marginal benefits of having a scoop of ice cream against the marginal cost. In this case, the marginal benefit is the enjoyment of delicious ice cream. The marginal cost is the extra fullness you would feel as a result of eating even more food and the extra calories that you have now consumed. If the marginal benefit outweighs the marginal cost, then you should indulge in dessert.
  - Trade creates value: If you enjoy cooking but dislike doing dishes, and your roommate enjoys eating homemade meals but doesn't like cooking, you can trade: You can cook a homemade meal for the two of you, and your roommate can do the dishes. You are both better off: you can avoid doing dishes by cooking a little bit more food, and your roommate can enjoy a homemade meal in exchange for doing a few dishes.
4. If Colombia decided to specialize in the production of coffee, it could trade coffee to Canada in exchange for computer software. This process illustrates gains from specialization and trade. Both countries have a comparative advantage in producing one particular good. Colombia has ideal coffee-growing conditions, and Canada has a workforce that is more adept at writing software. Since both countries specialize in what they do best, they are able to produce more value than they could produce by trying to make both products on their own.
  5. Depending on the opportunity cost of moving by yourself, hiring movers might actually be less costly. Suppose that it costs \$200 to hire movers to help you move, and if you move by yourself, it would take you 8 hours. If the opportunity cost of those 8 hours is working a job that nets you \$30/hour (so \$240 over 8 hours), then it definitely makes sense to hire movers, and it would be rational to do so.

**Hints and Common Pitfalls:** People often forget to think of opportunity cost when trying to figure out the best course of action. Remember to take into account what you would have done if you didn't move yourself. This is your opportunity cost.

Another thing to think about: It might be rational to choose to hire movers even if your opportunity cost isn't working at a job. Suppose the opportunity cost of moving by yourself is spending time with friends that you won't be able to see for another year. In this case, if you think that 8 hours with friends is worth more than \$200, it would be rational for you to hire movers.

6. The women have a direct positive incentive to wait in line. They will save \$200 when they buy the TV. There are many trade-offs that they face: missed sleep, time they could have spent with family members and friends, and the time they could be working instead of waiting in line, to name just a few.

It is hard to see the women's choice as rational when examining it using marginal analysis. They will save \$200, but they will spend hundreds of hours in line. There is a high opportunity cost here and the hourly rate that they are using to value their time is very low. Saving \$200 but spending 500 hours to save that money makes their time worth 40 cents an hour. They could work an extra job at minimum wage for 40 hours and earn enough money to purchase the TV at full price and still have over 400 hours free to do something else. In short, they don't seem to be aware of the opportunity cost of their time.

7. The answers will vary depending on your goals. For example, let's say you want to be one of the best surgeons in a town, or a stock trader/broker for a Wall Street firm, or an aspiring entrepreneur. To achieve your ambitious goal, you know you have to work hard, which requires that you sacrifice many different things you love to do.

Upon completing your undergraduate program in finance, suppose you apply to many Wall Street companies and banks in your town. You get an offer (a decent one) with benefits. Let's say your ultimate goal is to become a financial advisor. Should you take this job and climb up the career ladder within this company? Or should you pursue an MBA program that pays you a higher salary and offers a better opportunity down the road? You must choose either one of these opportunities but not both, which means you have to sacrifice the other opportunity.

You are in your advisor's office discussing what career path(s) you want to take upon

graduation. More importantly, this discussion determines what courses you should take for next semester. If you choose an entrepreneurship field, there is a certain sequence of courses you must complete by the time you graduate. On the other hand, if you choose an economics major, you must complete a different set of courses, which may or may not overlap. You must make a decision now before classes are quickly filled in. These courses are essential for your graduation in a timely manner. What would you do?

Another example: You have a part-time job in addition to being a full-time student. You love your job and working with the people around you, especially your boss (and his/her management style). It can be hard to find such a combination. Your boss begs you to work extra hours for the next two weeks when one of your coworkers has a family situation and can't come to work. But you have three midterm exams coming up, and you were planning to spend more time studying. If you work more hours, you know you're

likely to perform poorly or even fail the course(s). If you can't work more hours, you are unlikely to get promoted or stay in the job, which is essential for your long-term goals. As you can see, there are always trade-offs to consider when working to achieve your goals.

8. a. In this example, Patrick is better off by \$0.50 because he was willing to pay \$2.50 but paid just \$2.00. Jill is better off by \$0.75 because she would have accepted \$1.25 but Patrick paid her \$2.00. So the total value created is the additional value to Patrick (\$0.50) plus the additional value to Jill (\$0.75), which sums to \$1.25.
- b. The value added for Jason is \$1,500, which is the difference between the minimum price he would have accepted (\$6,000) and the price he received (\$7,500). The value added for Hillary is \$2,500, which is the difference between the maximum price she would have paid (\$10,000) and the price she actually paid (\$7,500). In total,  $\$1,500 + \$2,500 = \$4,000$  in new value was created through the exchange.