Solutions for Principles of Macroeconomics 8th Edition by Frank

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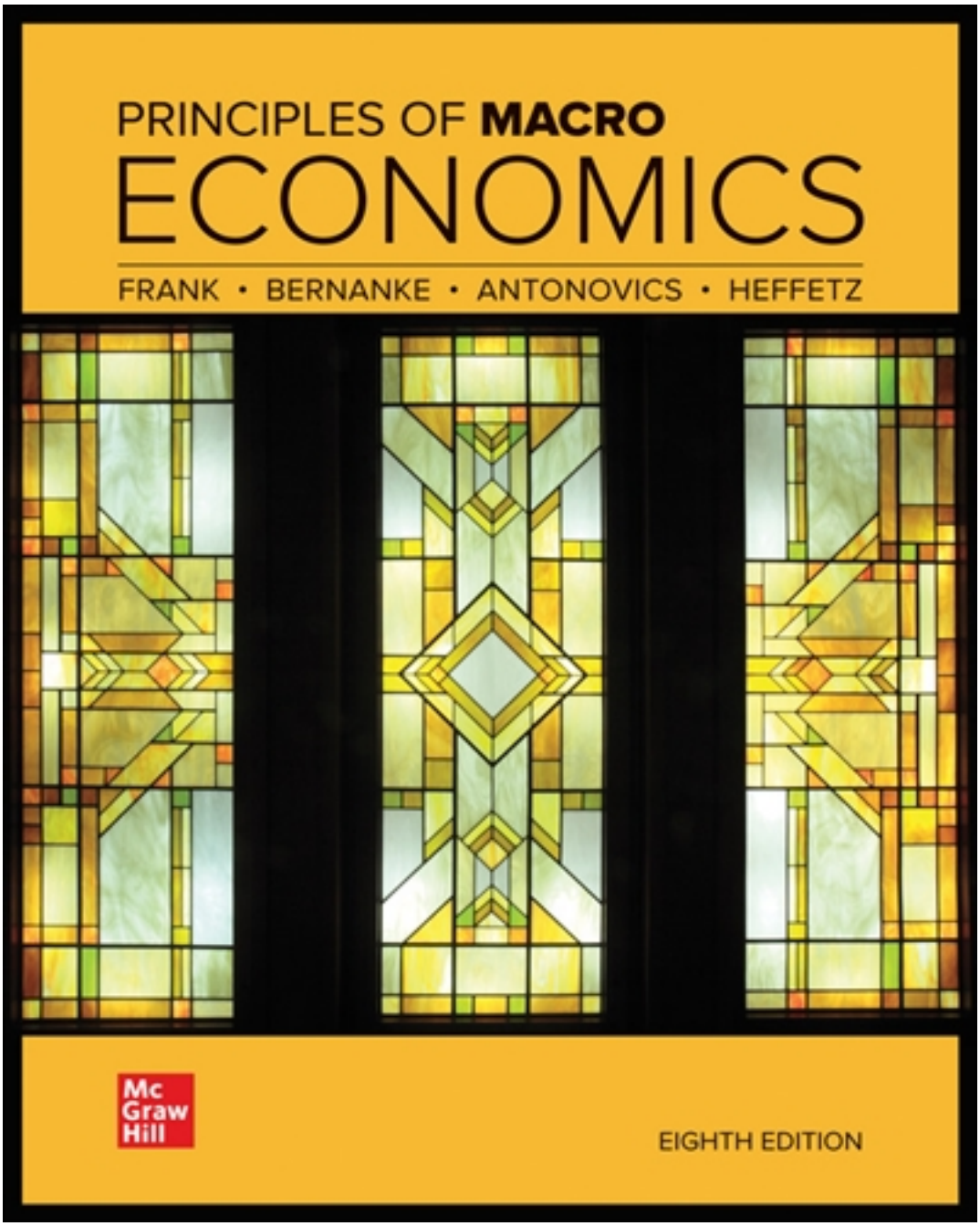

Solutions

CHAPTER 1 THINKING LIKE AN ECONOMIST

Answers to Review Questions

1. Your friend probably means that the benefits from private solo lessons are greater (your tennis game will improve faster) than if you take group lessons. But private lessons are also more costly than group lessons. So those people who don't care that much about how rapidly they improve may do better to take group lessons and spend what they save on other things.

2. False. According to the Cost-Benefit Principle, your willingness to make the trip should depend only on whether $30 is more or less than the cost of driving downtown.

3. Because the price of a movie ticket is a cost the patron must pay explicitly, it tends to be more noticeable than the money that he or she would fail to earn by seeing the movie. As Sherlock Holmes recognized, it's easier to notice that a dog has barked than that it has failed to bark.

4. Using a frequent flyer coupon for one trip usually means not having one available to use for another. By thinking of frequent-flyer travel as free, people fail to consider the opportunity cost of using the coupon, thereby making wasteful travel decisions.

5. Your tuition payment is a sunk cost as long as it is non-refundable, since the payment cannot be recovered even if you drop out of school. If the payment is refundable until a certain date, it is not a sunk cost until after that date.

Answers to Problems

1. It could be that most students are aware that there are other, more important, uses of the school's $20 million. Because resources are scarce, having more of one thing necessarily means having less of another. If the school spends $20 million on a new recreation facility, then it will have $20 million less to spend on other projects, such as additional student housing. If the value to students of those alternate projects is greater than the value they place on the new recreation facility, then they would rationally vote "no."

2. The economic surplus from washing your dirty car is the difference between the benefit you receive from doing so ($6) minus your cost of doing the job ($3.50), or $2.50.

3. The marginal benefit of adding a pound of compost is the extra revenue you earn from the additional pound of tomatoes grown. Therefore, you should continue to add more compost as long as the marginal benefit exceeds or equals the marginal cost of adding another pound of compost ($0.50). This type of problem is best answered using a table such as the one below. Note that by adding the fourth pound of compost, you'll get an additional 2 pounds of tomatoes, or $0.60 in extra revenue, which covers the $0.50 cost of the extra pound of compost. However, adding a fifth pound of compost yields only 1 additional pound of tomatoes, so revenue increases by only $0.30, which is less than the $0.50 cost of the additional pound of compost. Therefore, you should add 4 pounds of compost and no more.

Pounds of compost	Pounds of tomatoes	Extra pounds of tomatoes	Extra revenue or marginal benefit	Extra or marginal cost
0	100	-	-	-
1	120	20	$6.00	$0.50
2	125	5	$1.50	$0.50
3	128	3	$0.90	$0.50
4	130	2	$0.60	$0.50
5	131	1	$0.30	$0.50
6	131.5	.5	$0.15	$0.50

4. In applying the cost-benefit principle, you should only consider the costs that change with your decision. Since you have already bought your ticket, the $30 you spent on it is a sunk cost. It is money you cannot recover, whether or not you go to the game. Thus, in deciding whether to see the game, you should compare the benefit of seeing the game (as measured by the largest dollar amount you would be willing to pay to see it) to only those *additional* costs you must incur to see the game (the opportunity cost of your time, whatever cost you assign to driving through the snowstorm, etc.).

   Jamal, too, must weigh the opportunity cost of his time and the hassle of the drive in deciding whether to attend the game. But he must also consider the $25 he will have to spend for his ticket. At the moment of deciding, therefore, the remaining costs Jamal must incur to see the game are $25 higher than the remaining costs for you. And since you have identical tastes—that is, your respective benefits of attending the game are exactly the same—Jamal should be less likely to make the trip. You might think the cost of seeing the game is higher for you, since your ticket cost $30, whereas Jamal's will cost only $25. But at the decision-making moment, only the ticket cost for Jamal ($25) changes whether he goes or not, and is therefore the only cost that should be considered.

5. If Kenya kept the $200 and invested it in additional mushrooms, at the end of a year's time she would have $400 worth of mushrooms to sell. Therefore, Fatima must give Kenya $200 in interest in order for Kenya not to lose money on the loan.

6. Even though you earned four times as many points from the first question than from the second, the last few seconds you spent on question 2 added more points to your score than did the last few seconds you spent on question 1. This suggests that if you spent a little more time on question 2 and a little less time on question 1, then you'd get more extra points on question 2 than you'd lose on question 1.

7. According to the cost-benefit principle, the two women should make the same decision. After all, the benefit of seeing the play is the same in both cases, and the cost of seeing the play—at the moment each must decide—is exactly $10. Some may think that in the case of the lost ticket the cost of seeing the play is not $10 but $20, the price of two tickets. However, in terms of the financial consequences, the loss of a ticket is clearly no different from the loss of a $10 bill. Both of these are examples of a sunk cost, as the $10 is lost whether one attends the play or not. So in each case, the question is whether seeing the play is worth spending $10. If it is worth $10 to see the play, both Monica and Rachel should see it; otherwise they should not attend the performance. Whichever your answer, it must be the same for both Monica and Rachel.

8. In the current system, the cost is $6 per week no matter how many cans you put out, so the cost of disposing of an extra can of garbage (the marginal cost) is $0. Under the tag system, the cost of putting out an extra can is $2, regardless of the number of the cans. Since the marginal cost of putting out cans is higher under the tag system while the marginal benefit remains the same, we would expect this system to reduce the number of cans collected.

9. At both houses, the cost of drinking a cola is that it's not available to drink later, but at the Hector's house, this cost is low because your sibling may drink the cola before the other is able to. This gives each of Hector's children a strong incentive to consume the colas now. Jin, by contrast, has eliminated this incentive by not allowing either child to drink more than half the colas. As a result, his children can consume the cola at a slower, more enjoyable pace.

10. If Adriana is rational, she continues each scooter ride as long as the marginal benefit of riding a little longer is greater than the marginal cost. Her usage pattern under the current plan tells us that Adriana values the tenth minute of each ride at no less than its marginal cost, 20 cents. For a 10-minute ride, both plans charge exactly the same amount, $2. But at that point, under the new plan, the marginal cost is only 10 cents per minute. And since her benefit of riding an additional minute is the same under both plans, she's likely to take longer rides under the new plan.

11. At University A, the marginal or extra cost for each additional pound of food is $0, so everybody will keep eating until the extra benefit from eating an extra pound is also equal to $0. At University B, however, the cost of eating an extra pound of food is $2, so people will

stop eating when the benefit of eating an extra pound falls to $2. Food consumption will thus be higher at University A.