Ten Principles of Economics

Answer 1: c. Wind, solar, and hydro are all renewable energy sources—we're not going to run out of the sun anytime soon. I hope. Fossil fuel, on the other hand, exists in obviously finite quantities, and that means it's more scarce than the other options.

Answer 2: c. In order to get something, you have to sacrifice something else—this is the tradeoff. For example, if you spend an hour at the gym, then you can no longer spend that hour playing Candy Crush Saga. There is *always* a tradeoff in one form or another.

Answer 3: c. Pollution is an externality of many types of production. In other words, that factory is just pumping their CO2 into the atmosphere at no cost instead of disposing of it properly—and consequently society as a whole pays for the cost of those CO2 emissions. A law that requires the factory to dispose of its CO2 properly will reduce pollution, but since the factory now has to pay to dispose of the CO2 it means their cost of doing business increases. The increase in the cost of business means fewer profits, and fewer profits means less income (because ultimately profit is what becomes everyone's income).

Answer 4: a. Self explanatory.

Answer 5: c. Options (a) and (b) aren't costs, they're benefits. (d) isn't right 'cuz there's always an opportunity cost. What he sacrifices in order to study is the joy he gets from watching Keeping Up with the Kardashians. I assume that's what he would have watched.

Answer 6: d. A rational decisionmaker won't just say, "Will I enjoy eating three bowls of ice cream? Yes! So I'll do it." Consider the following thought process.

- I receive 10 units of happiness from eating the first bowl of ice cream because it tastes good, but I'm going to put on 1 pound, which takes away 2 units of happiness. So overall I get 8 units of happiness from the first bowl of ice cream. Sure, I'll eat it.
- I receive 8 units of happiness from eating the second bowl of ice cream because it tastes good, but I'm going to put on 1 more pound, which takes away 4 units of happiness. So overall I get 4 units of happiness from the second bowl of ice cream. Sure, I'll eat it. Now I have $8 + 4 = 12$ units of happiness.
- I receive 4 units of happiness from eating the third bowl of ice cream because it tastes good, but I'm going to put on 1 more pound, which takes away 6 units of happiness. So overall I *lose* 2 units of happiness from the third bowl of ice cream, which would give me $12 - 2 = 10$ units of happiness. I'm not gonna do that—I'm happier with just the two bowls.

Someone who doesn't think at the margin might just look at three bowls and say, "I get 10 units of happiness, which is positive, so sure I'll do it." But by thinking at the margin, we see that eating two bowls is actually going to maximize happiness.

Answer 7: d. These policies change the *incentives* people face, and their behavior and decisionmaking might respond accordingly. Sometimes this will have unintended consequences. For instance, if everyone is

required to wear seatbelts, then people might feel safer and consequently will drive a bit more recklessly, leading to more accidents (which does appear to be the case).

Answer 8: d. Germany had to pay reparations to France after World War I, and in order to actually pay the reparations had to pretty much just print money. This rapidly decreased the value of their currency, which lead to hyperinflation.

Thinking Like an Economist

Answer 9: b. In many sciences, you can change only one variable and hold everything else constant—a controlled experiment. But you can't really do that in economics since you have a large number of people that you can't just boss around for your experiment. That makes experiments difficult to pull off. The field of econometrics deals with statistical techniques for getting around this difficulty.

Answer 10: d. In this case we're thinking of Englebert as the firm and Mrs. Doubtfire as the household. He gets paid $50 for mowing the lawn, she receives the mowed lawn, so it's an event in the goods and services market.

Answer 11: a. If we're inside the PPF, then we can increase production of one or both of the goods without having to reduce the production of any other good—this implies that some resources are not being utilized.

Answer 12: d. Okay, so the country is producing more of each. This could mean there are more people working; or technology has improved; or more resources have been acquired because all of these things improve production or production capacity.

Answer 13: c. If you produce very little of good, then there is very little opportunity cost for having one more of that good. On the other hand, if you have a lot of a good, then there is a large opportunity cost of having one more of that good. This is reflected in the bowed out shape.

Answer 14: d. Micro concerns itself with households, firms, industries, cities. Macro concerns itself with nation-wide economic phenomena.

Answer 15: b. You would need to data to determine what the effect of the abolishing of the minimum wage would be. Then you'd need values to determine whether you consider the effect to be desirable or not.

Interdependence and the Gains from Trade

Answer 16: b. This was shown in the example done in discussion.

Answer 17: c. If the economy isn't trading, then it can only consume what it can produce. When it trades, however, supposing comparative advantages exist, then the economy can consume beyond its PPF. (Again, like the example from discussion.)

Answer 18: a. I like to convert everything in per-hour terms. For Darth Vader, we have

- one hour nets 1/2 of a mowed lawn
- one hour nets one trimmed tree

So he has a tradeoff with respect to how to spend each of his hours: either 1/2 of a mowed lawn or 1 trimmed tree. In the notation I like to use,

$$\frac{1}{2}m \sim 1t.$$

For Darth Sidious, we have

- one hour nets 1/3 of a mowed lawn
- one hours nets 1/2 of a trimmed tree

So I'll express Darth Sidious's opportunity costs as

$$\frac{1}{3}m \sim \frac{1}{2}t \quad \Longrightarrow \quad \frac{2}{3}m \sim 1t.$$

Darth Vader has to sacrifice 1/2 of a mowed lawn for one trimmed tree; Darth Sidious has to sacrifice 2/3 of a mowed lawn for one trimmed tree; and therefore Darth Vader has the lower opportunity cost, and hence the comparative advantage, in trimmed trees.

Answer 19: a. Suppose I can sacrifice two boxes of Swedish Fish for one box of Mike and Ikes if left to my own devices—this is my no-trade opportunity cost. But the dude across the street is willing to give me one box of Mike and Ikes in exchange for only one box of Swedish Fish. I like that offer because I don't have to sacrifice as much Swedish Fish to get that box of Mike and Ikes.

Answer 20: c. The US should produce more noodles and export them when it has the comparative advantage in noodles; equivalently, when Italy has the comparative advantage in wine.