

## Interdependence and the Gains from Trade

**Answer 1: b.** This was shown in the example done in discussion.

**Answer 2: 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 3: 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 hour nets 1/2 of a trimmed tree

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

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

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 4: 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.

**Answer 5: c.** Uranus has the lowest opportunity cost of producing Alpaca fur since they only have to sacrifice 4 quarts of eggnog for one pound of Alpaca fur. Therefore Uranus will specialize in and export Alpaca fur, whereas Jupiter will specialize in and export eggnog.

- Uranus can sacrifice one pound of Alpaca fur for 4 quarts of eggnog if they don't bother trading. So in order for Uranus to actually agree to export away their Alpaca fur, they'll want *more* than 4 quarts of eggnog in return for exporting away one pound of Alpaca fur.
- Jupiter is importing the Alpaca fur. With no trade, they could get one pound of Alpaca fur by sacrificing 6 quarts of eggnog. So in order for Jupiter to actually agree to import Alpaca fur, they'll want to export away *less* than 6 quarts of eggnog in return to receiving one Alpaca fur.

Therefore the range of mutually acceptable terms of trade is the interval (4, 6) quarts of eggnog per pound of Alpaca fur.

**Answer 6: 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.

## The Market Forces of Supply and Demand

**Answer 7: d.** In equilibrium, quantity supplied will equal quantity demanded and that outcome gives the price of the good.

- If quantity supplied is greater than quantity demanded, then the price is too high and units are going unsold—there is a surplus. Firms will lower their prices and produce less so that all of their goods can be sold on the market.
- If quantity demanded is greater than quantity supplied, then the price is too low and there is a shortage. The price of the good will increase until there is no longer a shortage, that is, until quantity supplied equals quantity demanded.

**Answer 8: d.** If the goods are not exactly the same, then we will have monopolistic competition. With a lot of buyers and sellers, they are called *price takers* and must accept the market price as given.

**Answer 9: b.** When either price or quantity of a good changes, it is represented by a movement along its demand curve. This is because price and quantity are the variables on axes of the graph. Think of it like changing  $x$  in  $y = mx + b$ , where you're not changing the line, you're just moving to a different point on the line. Since demand is assumed to be downward sloping via the Law of Demand, this means that a decrease in price means an increased quantity demanded.

**Answer 10: d.** What this means is that for *every* price, people want a lower quantity of the good. Visually this means the demand curve shifts to the left.

**Answer 11: c.** If the price of bagels goes up, then you might opt to buy muffins instead, even if the price of muffins hasn't changed. So for every price of muffins, there is a higher quantity demanded. This is seen as a rightward shift of the demand curve, i.e. an increase in the demand for muffins.

**Answer 12: a.** Yeah, this is pretty much just a definition. The opposite of a normal good is an inferior good—demand increases when income falls. Ramen noodles are an inferior good—you buy more when you're in college. Then you graduate and get a job and start buying real food instead, i.e. no more ramen noodles.

**Answer 13: a.** The law of supply says: producers will want to supply a larger quantity of a good when that good is being sold for a higher price. This explains the upward slope of the supply curves. Options (b) and (c) are about shifting the supply curve, and (d) is the opposite of what the law of supply says.

**Answer 14: b.** If everyone expects the price of gas to be higher in the future, they will sell less of it now to take advantage of higher future prices. This means today's supply of gas will decrease, i.e. shift to the left.

**Answer 15: c.** We are shifting both supply and demand to the left, which makes it unambiguous that the equilibrium quantity will decrease. But the impact on price depends on which shift is bigger. If the decrease in supply is larger, then the price will go up. If the decrease in demand is larger, then the price will go down. If they shift by the same amount, there will be no change in price. Try drawing all three cases to convince yourself.