1. In the market depicted below there is either a price ceiling or a price floor—surprisingly, it doesn’t matter which one it is: Whether it’s an $80 price floor or a $30 price ceiling, the chart looks the same.

In the chart, there’s a rectangle and a triangle. One represents the value lost from the “deals that don’t get made” and one represents the value lost from “the deals that do get made.” Which is which?

Triangle B represents value lost from the “deals that don’t get made.” Rectangle A represents the value lost in the “deals that do get made”: the waiting in line by consumers if it’s a price ceiling, or the wasteful searching (e.g., advertising, marketing) by suppliers if it’s a price floor.

2. Let’s count the value of lost gains from trade in a regulated market. The government decides it wants to make basic bicycles more affordable, so it passes a law requiring that all one-speed bicycles sell for $30, well below the market price. Use the data below to calculate the lost gains from trade. Supply and demand are straight lines.

a. What is the total value of wasted time in of the lost gains from trade?
$50 \times 100 = $5,000

b. What is the value of the lost gains from trade?
$50 \times 100 \times 0.5 = $2,500. This is the triangle formula again.

c. Note that we haven’t given you the original market price of simple bicycles—why don’t you need to know it? (Hint: The answer is a mix of geometry and economics.)
You don’t need to know the market price because we don’t need to know all the dimensions of a triangle to measure its area, and because “willingness to pay,” “willingness to supply,” and the equilibrium quantity and the price-controlled quantity tell us all we need to know.

3. When the United States had price controls on oil and gasoline, some parts of the United States had a lot of heating oil while other states had long lines. As in the chapter, let’s assume that winter oil demand is higher in New Jersey than in California. If there had been no price controls, what would have happened to the prices of heating oil in New Jersey and in California and how would “greedy businesspeople” have responded to these price differences?

If the demand for heating oil rose in New Jersey, then the price in New Jersey would rise. This would encourage greedy businesspeople to ship the gasoline on trucks or in pipelines from California to New Jersey. This would reduce the shortage in New Jersey, as if by an invisible hand.

4. The Canadian government has wage controls for medical doctors. To keep things simple, let’s assume that they set one wage for all doctors: $100,000 per year. It takes about 6 years to become a general practitioner or a pediatrician, but it takes about 8 or 9 years to become a specialist like a gynecologist, surgeon, or ophthalmologist.

What kind of doctor would you want to become under this system? (Note: the actual Canadian system does allow specialist to earn a bit more than general practitioners, but the difference isn’t big enough to matter.)

If both jobs pay about the same, most people would rather be a general practitioner—the job is easier, the hours are better, and you get out of school sooner. That’s actually what’s happening in Canada: They have lots of generalists and few specialists.

5. In the 1970s, AirCal and Pacific Southwest Airlines flew only within California. As we mentioned, the federal price floors didn’t apply to flights within just one state. A major route for these airlines was flying from San Francisco to Los Angeles, a distance of 350 miles. This is about the same distance as from Chicago, Illinois, to Cleveland, Ohio. Do you think AirCal flights had nicer meals than flights from Chicago to Cleveland? Why or why not?

AirCal flights were cheaper but had worse meals than flights from Chicago to Cleveland. This is because in the unregulated California market, businesses didn’t have to provide inefficiently high quality to make up for the extra-high price. Instead, Californians could get lots of cheap flights with peanuts and soda.

6. In the chapter, we focused on a sugar tariff that eliminated all imports. Let’s now take a look at the case where the sugar tariff eliminates some but not all imports. We will also examine the closely related case of a quota on sugar imports. The figure below shows a tariff on sugar that is lower than the one we discussed in the chapter so some sugar is imported even after the tariff.

a. Label the free trade equilibrium, the tariff equilibrium, wasted resources, lost gains from trade, and tariff revenues.

Area B is wasted resources, area C is lost gains from trade, area D is the tariff rate times the quantity of imports so it is equal to tariff revenues. The diagram should look like this:
b. Now imagine that instead of a tariff, the U.S. government uses a quota that forbids imports of sugar greater than 6 billion pounds. (Equivalently imagine a tariff that is zero on the first 6 billion pounds of imports but then jumps to a prohibitive level after that quantity of imports—this is closer to how the system works in practice.) Under the quota system what does area D represent? Would importers of sugar prefer a tariff or a quota?

Under the quota system, 6 billion pounds of sugar are allowed to enter the United States at a zero tariff rate. Since the world suppliers who manage to import this sugar have costs of 9 and are allowed to sell in the United States at a price of 20, area D represents additional profits (producer surplus) that flow to importers. Thus, importers would much prefer a quota to a tariff. Notice that with the quota there are no tariff revenues so, all else equal, a tariff is better for the U.S. government.

7. Let’s review the basic mechanism of the elimination principle.
   a. When demand rises in Industry X, what happens to profits? Do they rise, fall, or remain unchanged?
      Profits rise when demand rises.
   b. When that happens, do firms, workers, and capital tend to enter Industry X, or do they tend to leave?
      When profits are positive, firms enter the industry.
   c. Does this tend to increase short-run supply in Industry X or reduce it?
      This increases short-run supply in industry X.
   d. In the long run, after this rise in demand, what will profits typically be in Industry X?
      In the long run, profits are zero at the typical firm.

8. a. In the highly competitive TV manufacturing industry, a new innovation makes it possible to cut the average cost of a 50-inch plasma screen from $1,000 to $400. Most TV manufacturers quickly adopt this new innovation, earning massive short run profits. In the long run, what will the price of a 50-inch plasma TV be?
      The price will fall to $400, because P = AC in the long run in a competitive industry.

b. In the highly competitive memory key industry, a new innovation makes it possible to cut the average cost of a 20-megabyte memory key, small enough to fit in your pocket, from $5 to $4. In the long run, what will the price of a 20-megabyte memory key be?
      P = $4 in long run.

c. Assume that the markets in parts (a) and (b) are both constant cost industries. If demand rises massively for these two goods, why won’t the price of these goods rise in the long run?
The price won’t rise because new firms will enter (and some current firms will expand) keeping the average cost equal to the new, lower value. That’s what it means to be in a constant cost industry.

d. In constant cost industries, does demand have any effect on price in the long run?
No, it doesn’t. Demand has an effect on quantity but not on price in constant cost markets.
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