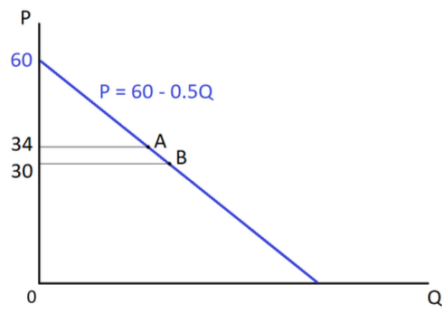


Section Exercise 6 Solutions

- 1) Take a look at the demand curve pictured. The inverse demand curve equation here is

$$P_D = 60 - 0.5Q_D$$

Two points are marked: at point A price is 34 and at point B price is 30.



- a) What is the price elasticity of demand (using the midpoint method) between points A and B? Please type out the calculation you performed as well as your answer, and explain in plain English what the calculation is measuring.

- b) Taking the same demand curve from question 1, say that we had a supply curve in this market given by $Q_S = P_S - 30$. Find the equilibrium price and quantity traded, and calculate consumer and producer surplus. Please type out your calculations as well as your answers. What exactly is being measured by consumer surplus?

- 2) Mayor Jim, sushi enjoyer, is concerned about high sushi prices in Berkeley and promises to do something about it. He implements pro-sushi policies: he creates a program of grants and tax breaks to make it cheaper and easier to open sushi restaurants.
 - a) Using a supply and demand model (assuming for simplicity that the market for sushi is perfectly competitive) and aided by a diagram, explain the rationale behind Jim's policy. Do you think Jim's policy will be good or bad for consumers of sushi? Why and in what sense?

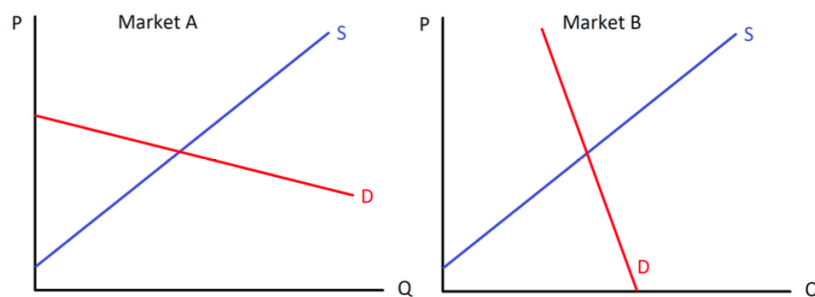
- b) A couple of years after Jim's policies are implemented, sushi prices in Berkeley are higher than before the policies were implemented. Did Jim's policies fail? Explain with a diagram and an explanation that considers an appropriate counterfactual analysis.

- 3) A market has demand given by $Q_D = 80 - 2P_D$ and supply given by $Q_S = P_S - 10$. There is a per-unit tax on the good of 15 dollars per unit.
- a) Find the equilibrium price and quantity, if there was no tax.
 - b) Find the prices and quantity traded in the situation with the tax.
 - c) With the aid of a diagram, calculate the division of surpluses (consumer surplus, producer surplus, and, if applicable, tax revenue and deadweight loss) with and without the tax.

- d) Thinking about an application of the model of taxation in supply and demand: on slides 45-49 of the Topic 5 notes we looked at some research on the effect of soda taxes. Based on the analysis of the Philadelphia soda tax (and assuming for simplicity that this the market is perfectly competitive), which seems less price elastic in that market, the demand for soda or the supply? Why?

- 4) Consider two perfectly competitive markets. The supply curve looks identical in each one, and the equilibrium price is currently the same in each one. However, in one of the markets demand is more price elastic at the equilibrium price than it is in the other.

- a) Explain in simple terms what 'demand is more price elastic' means. Then take a look at the following two diagrams. In which market is demand more price elastic, and how can you tell?



- b) Say that an identical per-unit tax is imposed in both markets. Illustrate this on your diagrams, including what happens to prices and quantity traded in each market. In which market would we expect to see a bigger change in quantity traded, and in which would we expect to see a bigger price increase for buyers?