

Problem Set 1

On what and how to submit

- For this and all future problem sets, questions are from the “Problems” section of the questions at the end of the chapter.
- Due before Lecture 2 to Blackboard. See assignment turn-in on course home page.
- Submit a pdf file
- Name the file “ps01-[lastname].pdf”. For example, my file would be “ps01_brooks.pdf”.
- In addition, write your name at the top of the problem set.
- You do not need to type your submission. Any **legible** submission is ok. For example, you can write the problem set with hand-drawn graphs, take a picture, and submit the picture as a pdf.

1. GLS Chapter 2, Question 8

Both supply and demand must shift outward. Old curves are in black, and new curves are in red:



2. Market Equilibrium

Suppose that the supply of Epi-pens is represented by $Q_S = 25P$, and that the demand for Epi-pens is represented by $Q_D = 10,000 - 25P$.

(a) What is the current equilibrium price and quantity?

You can find equilibrium price and quantity by setting $Q_D = Q_S$:

$$\begin{aligned}Q_D &= Q_S \\10,000 - 25P &= 25P \\10,000 &= 50P \\P &= 200\end{aligned}$$

Solve for Q by plugging in to either the supply or demand equation. Using the supply curve, $Q = 25(200) = 5000$.

(b) Suppose that a generic producer enters the market and produces an additional 1,000 Epi-pens. What is the new supply curve (assuming that the generic and the brand name are perfect substitutes)?

Supply increases but is not a function of price. In other words, there are 1000 more units available, so $Q_S = 1000 + 25P$.

(c) Without doing any algebra, what do you anticipate should happen to price and quantity after the introduction of the generic alternative? Draw a diagram to illustrate what is going on.

Draw a downward sloping demand curve and an upward sloping supply curve. In our example, demand is unchanged and supply increases, which means the supply curve shifts outward. Price falls and equilibrium quantity increases.

(d) What are the new equilibrium price and quantity?

To find the new equilibrium quantity, follow the same steps as before by setting $Q_D = Q_S$:

$$\begin{aligned}Q_D &= Q_S \\10,000 - 25P &= 1,000 + 25P \\9,000 &= 50P \\P &= 180\end{aligned}$$

The new equilibrium quantity is $Q_S = 1000 + 25(180) = 5,500$. Alternatively, you can put the equilibrium price in the Q_D equation.

3. Give two recent examples of (i) when you have moved along the demand curve and (ii) when your personal demand curve has shifted. Briefly explain why each behavior is a shift or a move along the curve.

Refer to the textbook or lecture notes for factors that shift the demand curve. Recall that **only** price moves you along the demand curve.

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If you would like additional practice, work through the additional problems on the Achieve online textbook system. On the “course home” page, look for assignments with “no due dates.”