Microeconomics for Public Policy I
Fall 2025

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.

- Name the file "ps01_[lastname].pdf". For example, my file would be "ps01_brooks.pdf".

- Turn in to the file to the Piazza post

- Make sure your name is at the top of the submission.

- You do not need to type your submission. Any **legible** submission in pdf format is ok. For example, you can write the problem set with hand-drawn graphs, take a picture, make a pdf, and submit the 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 $Q_S = 2P$, and that the demand for Epi-pens is represented by $Q_D = \frac{100}{3} - \frac{4}{3}P$.

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

Set $Q_S = Q_D$:

$$
\begin{aligned}
Q_S &= Q_D \\
2P &= \frac{100}{3} - \frac{4}{3}P \\
2P + \frac{4}{3}P &= \frac{100}{3} \\
6P + 4P &= 100 \\
10P &= 100 \\
P &= 10
\end{aligned}
$$

Given this price, plug in to either the supply or demand curve: $Q_S = 2P = 2(10) = 20$.

Or, $Q_D = \frac{100}{3} - \frac{4}{3}P = \frac{100}{3} - \frac{4}{3}(10) = \frac{100}{3} - \frac{40}{3} = \frac{60}{3} = 20$.

Thus, the equilibrium price is 10 and the equilibrium quantity is 20.

(b) Suppose that a generic producer enters the market and produces an additional 20 Epi-pens. What is the new supply curve (assuming that the generic and the brand name are perfect substitutes)?

$Q_{S,new} = Q_{s,old} + 20 = 2P + 20$

(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.

We expect the equilibrium price to fall and the equilibrium quantity supplied to increase.

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

Set $Q_{S,new} = Q_D$:

$$
\begin{aligned}
Q_S &= Q_D \\
2P + 20 &= \frac{100}{3} - \frac{4}{3}P \\
2P + 20 + \frac{4}{3}P &= \frac{100}{3} \\
6P + 4P + 60 &= 100 \\
10P &= 40 \\
P &= 4
\end{aligned}
$$

Given this price, plug in to either the supply or demand curve: $Q_{S,new} = 2P+20 = 2(4)+20 = 8$.

Or, $Q_D = \frac{100}{3} - \frac{4}{3}P = \frac{100}{3} - \frac{4}{3}(4) = \frac{100}{3} - \frac{16}{3} = \frac{84}{3} = 28$.

Thus, the equilibrium price is 4 and the equilibrium quantity is 28.

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.

Any reasonably argued examples accepted.

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If you would like additional practice, I suggest the additional problems I posted on Achieve.