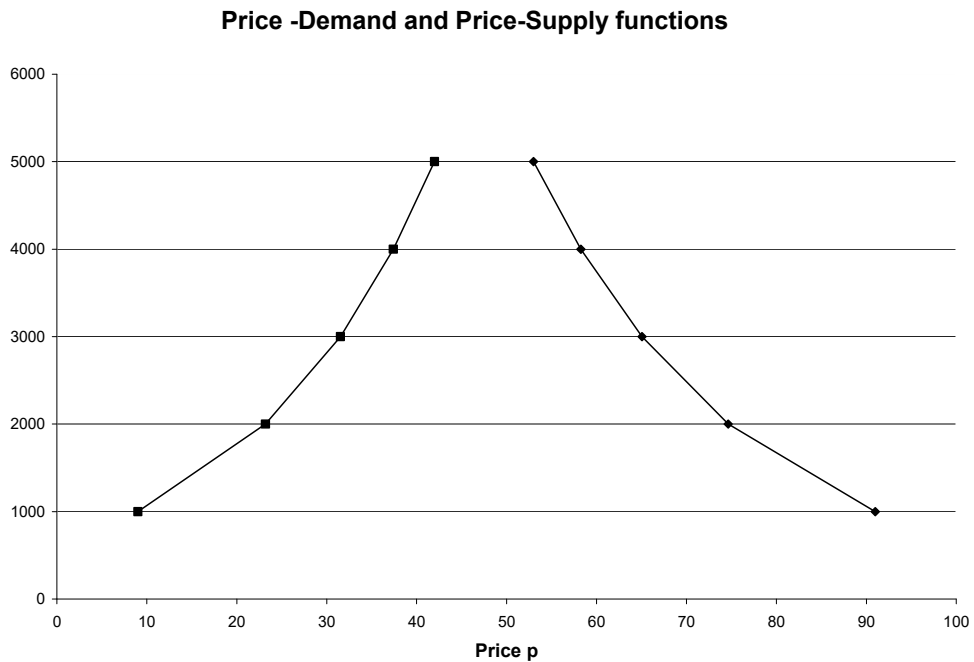


Solution for the case

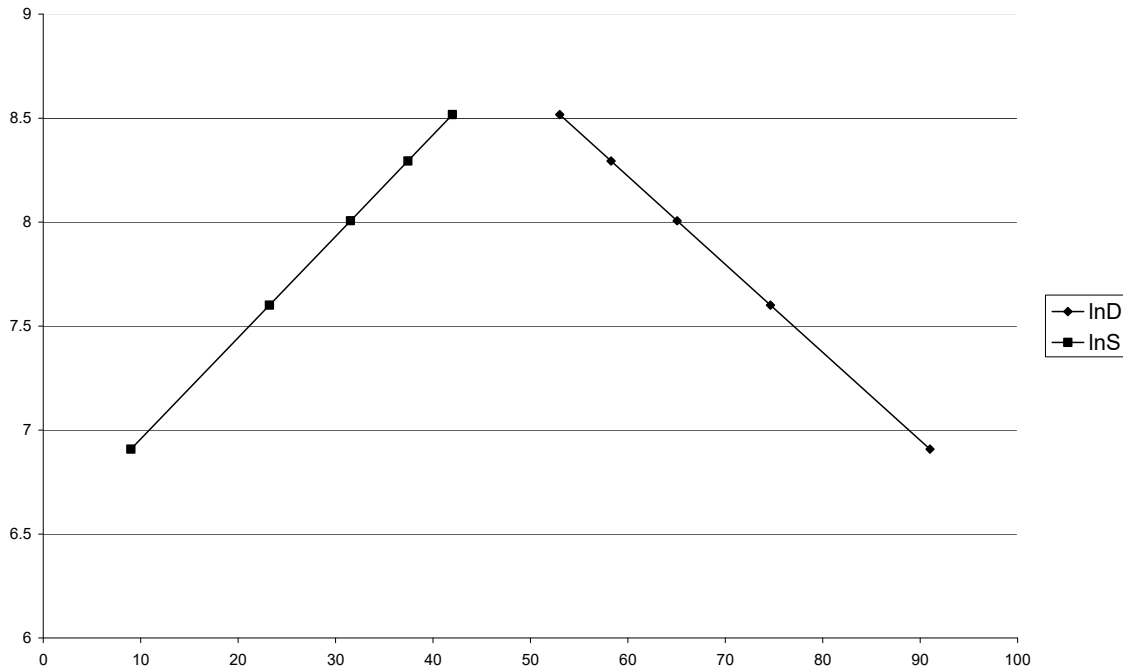
“Motorcycle Helmets with Bluetooth: Pricing Bluetooth Chips”

Table 1. Price - Demand			Table 2. Price - Supply	
Price p	Demand D	$\ln(D), \ln(S)$	Price p	Supply S
91.00	1,000	6.9	9.00	1,000
74.63	2,000	7.6	23.21	2,000
65.06	3,000	8	31.53	3,000
58.27	4,000	8.3	37.42	4,000
53.00	5,000	8.52	42.00	5,000

a) Plot the graphs for D as a function of p and S as a function of p .



b) Plot the graphs for $\ln(D)$ as a function of p and $\ln(S)$ as a function of p (“ln” stays for “natural logarithm”.)



Hint: for questions c-e you will need to estimate the relationship $D(p)$ and $S(p)$ as $\ln(D)=a+bp$, $\ln(S)=c+dp$.

c) Estimate the supply and the demand at a price level of \$50.

$$\ln(D) = 10.76 - 0.0424p$$

$$\ln(S) = 6.46 + 0.0488p$$

$$\text{Supply for } p=50 \quad S=7332$$

$$\text{Demand for } p=50 \quad D=5653$$

d) Does a price level of \$50 represent a stable condition, or is the price likely to increase or decrease?

At $p=50$, Demand is smaller than Supply \Rightarrow price is likely to decrease.

e) Find the equilibrium point. Write the equilibrium price to the nearest cent and the equilibrium quantity to the nearest unit.

Equilibrium point for $D = S$

Solve $\ln(D) = \ln(S)$, or

$$6.46 + 0.0488p = 10.76 - 0.0424p$$

$$p = 47.15$$

Equilibrium quantity = 6380.