

Exercises

MARKET

Calculating market equilibria

Consider a perfectly competitive market for a normal good where the demand for the good at each price is equal to $Q_D = 66 - p$ and the supply is equal to $Q_S = p/2$

Explain why the slope of the demand curve is negative

Explain why the slope of the supply curve is positive

For each of the following prices: 40, 46, 50, what is the market outcome?

Find the equilibrium quantity and price for the following cases:

- i. free market
- ii. an upper price limit of 36
- iii. an upper price limit of 48
- iv. a lower price limit of 56
- v. an increase in demand to $Q_D = 78 - p$

Green paradox

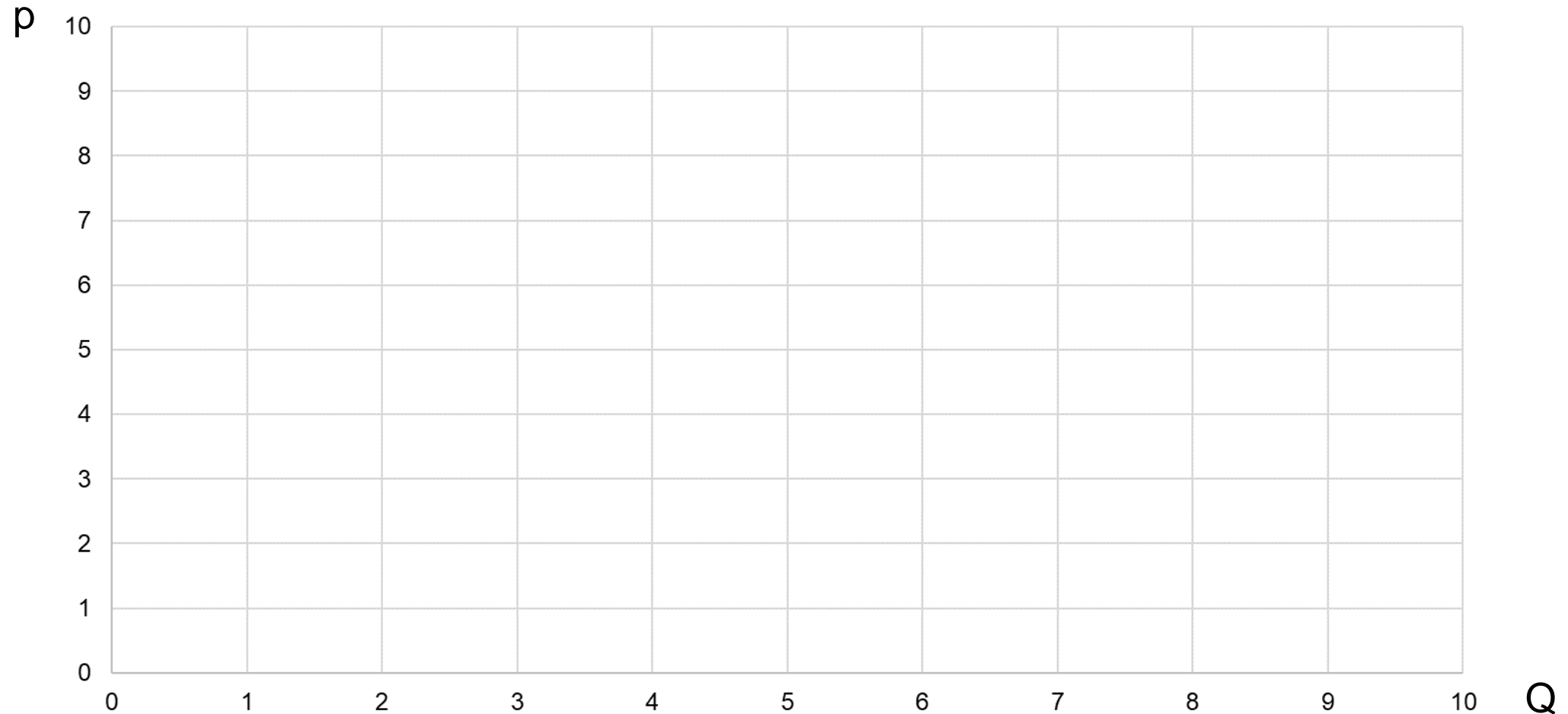
- Encouraging people to switch from buying an ICE car to buying an EV could crowd out other buyers from the EV market, who would switch to ICE; in the end, the car mix would not change
- Consider two types of buyers: buyers A are already quite motivated to buy an EV, whereas the WTP of buyers B is low:
- Demand of group A: $Q_A = 3 - p/2$; demand of group B: $Q_B = 3 - p$
- Supply of EV: $Q_S = -9 + 3p$
- Represent the market for EV and calculate its equilibrium before any support measure

Green paradox – market without support

Demand of group A: $Q_A = 3 - p/2$

Demand of group B: $Q_B = 3 - p$

Supply: $Q_S = -9 + 3p$



Green paradox

- Let us now assume that the purchase of EVs is encouraged through a fixed financial contribution (subsidy) of 2 per car
- How does this change the demand functions?

Green paradox – demand with support

Without subsidy:

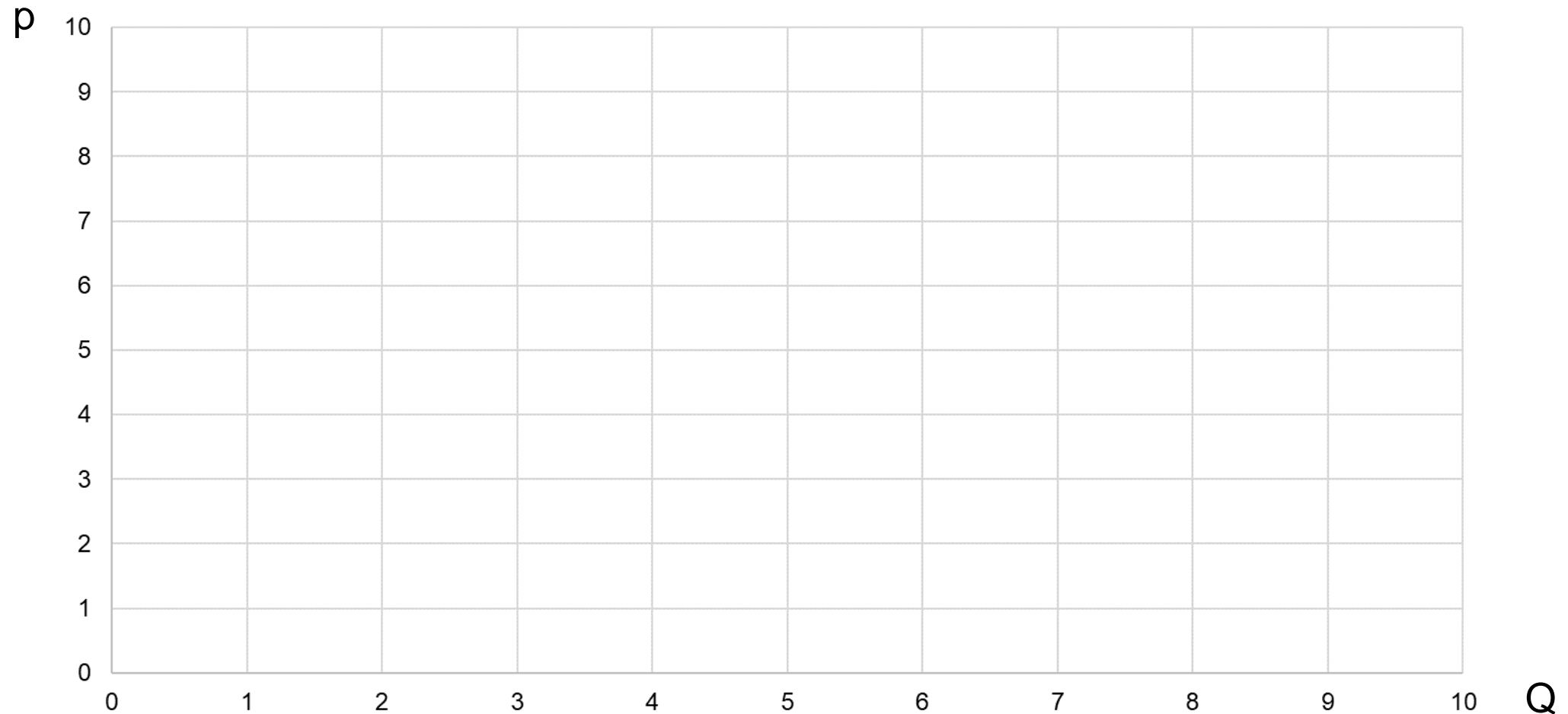
Demand of group A: $Q_A = 3 - p/2$

Demand of group B: $Q_B = 3 - p$

With subsidy:

Demand of group A:

Demand of group B:



Green paradox

- With the new demands and the unchanged supply, represent the market for EV and calculate its equilibrium with the support measure

Green paradox – market with support

Demand of group A: $Q_A = 4 - p/2$

Demand of group B: $Q_B = 5 - p$

Supply: $Q_S = -9 + 3p$

