



Microeconomics Unit 6

Free Response Questions

FRQ #1- Assume the market for self-driving cars is perfectly competitive.

- (a) Draw a correctly labeled graph of the self-driving car market and show the equilibrium price and quantity, labeled P_E and Q_E .
- (b) Assume that the use of self-driving cars significantly reduces traffic and car accidents. On your graph in part (a), show each of the following.
 - (i) The marginal social benefit curve, labeled MSB
 - (ii) The marginal social cost curve, labeled MSC
 - (iii) The social optimal price and quantity, labeled P_{S0} and Q_{S0}
 - (iv) The deadweight loss, shaded completely
- (c) If the government places a price floor at P_{S0} , will deadweight increase, decrease, or stay the same? Explain.
- (d) Identify a specific government policy that would eliminate deadweight loss.

FRQ #2- Assume that ten-cylinder cars are produced in a perfectly competitive market with a downward sloping demand curve and that ten-cylinder engines emit large amounts of air pollution.

- (a) Draw a correctly labeled graph of the ten-cylinder car market and show each of the following:
 - (i) The equilibrium price and quantity, labeled P_1 and Q_1
 - (ii) The marginal social cost curve, labeled MSC
 - (iii) The social optimal price and quantity, labeled P_2 and Q_2
 - (iv) The deadweight loss, shaded completely
- (b) Is the marginal social benefit at Q_1 greater than, less than, or equal to the marginal social cost?
- (c) Based on your graph, would a government ban on the production of ten-cylinder cars eliminate deadweight loss? Explain.
- (d) Assume instead that the government imposes a per-unit tax of $(P_2 - P_1)$ on ten-cylinder cars. Would this policy eliminate deadweight loss? Explain.