

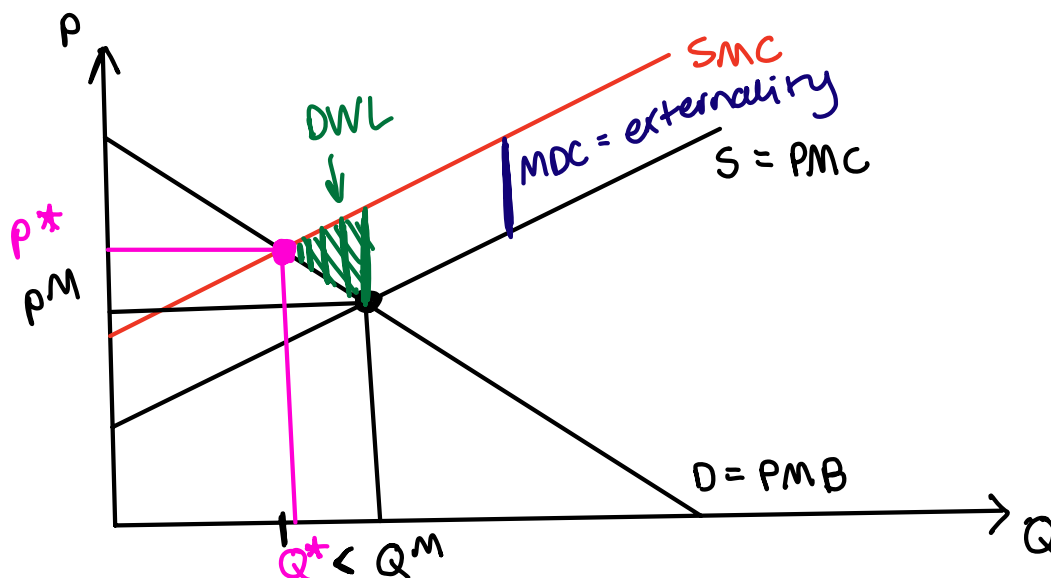
# ECON 101

## TA Worksheet Module 9 (Externalities and Public Goods)

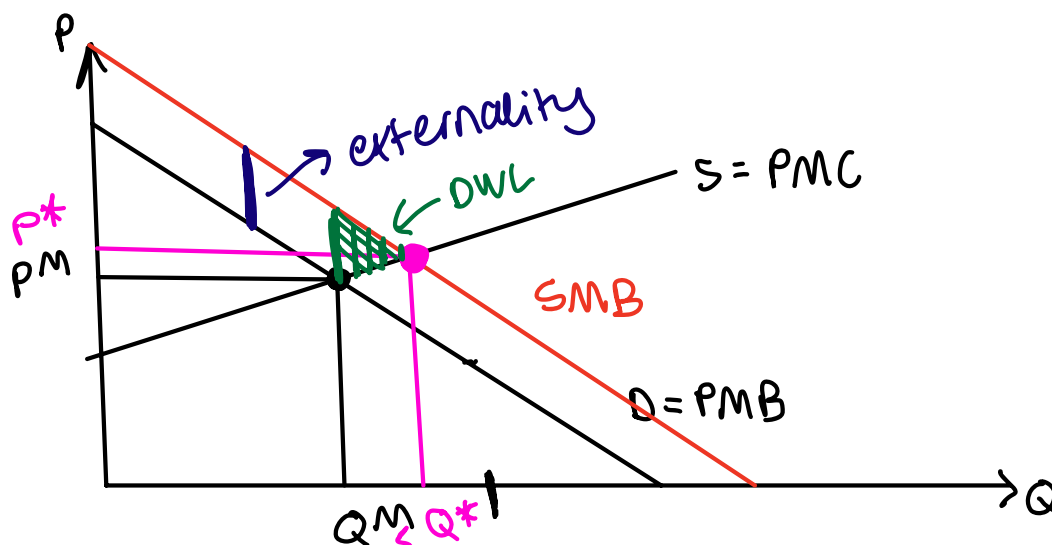
Name: \_\_\_\_\_

TA: \_\_\_\_\_

1. Draw a market with a negative externality. Clearly indicate the size of the externality (MDC), the MPC, the MSC, the market outcome (P and Q), the “socially optimal” outcome (P and Q) and the deadweight loss that exists when the market is in “market equilibrium”. Label everything!



2. Draw a market with a positive externality. Clearly indicate the size of the externality, the MPB (marginal private benefit), the MSB (marginal social benefit), the market outcome (P and Q), the “socially optimal” outcome (P and Q) and the deadweight loss that exists when the market is in “market equilibrium”.



3. Come up with an example of an economic choice that produces a negative externality (could be an industry or firm or could be a personal behavior). Then think of a law or policy that could correct that externality. What are the unintended consequences of that policy (if any).

firm polluting - injunction to stop

speeding - speed limits  
insurance incentives

4. List a private good, a public good, a "club" good, and an open access good. Share with your group and make sure everyone agrees on your classification. Most creative answers win!

private : Iphone

public : sidewalks

club : TSA precheck

open access : research topics

5. Let's say you and your 3 roommates decide to get cable. Your roommate Mike says, "nah, I won't watch it so I'm not paying." Mike ends up watching it ALL THE TIME. What problem is occurring here? Why does it happen?

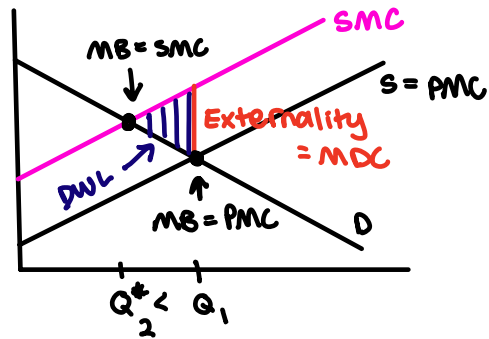
free rider

the good is nonexcludable

6. Consider the market below.

Market Demand:  $P = 50 - Q/10$

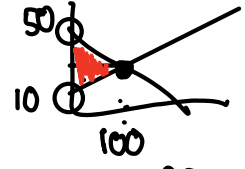
Market Supply:  $P = 10 + 3Q/10$



- a. What is the equilibrium P and Q? Calculate total surplus.

$$50 - \frac{Q}{10} = 10 + \frac{3Q}{10}$$

$$\frac{4Q}{10} = 40$$

$$Q = 100 \rightarrow P = 50 - \frac{100}{10} = 40$$


$$TS = \frac{1}{2}(50 - 10)(100) = 2000$$

- b. Now suppose the market creates a negative externality of \$4 per unit. What is the social optimal quantity?

$$S = 10 + \frac{3Q}{10} = PMC$$

$$SMC = 10 + \frac{3Q}{10} + 4 = 14 + \frac{3Q}{10} = 50 - \frac{Q}{10}$$

$$\frac{4Q}{10} = 36$$

$$Q = 90$$

- c. Calculate the deadweight loss created by this externality.

$$DWL = \frac{1}{2}(4)(100 - 90)$$

$$= \frac{1}{2}(40)$$

$$= 20$$