

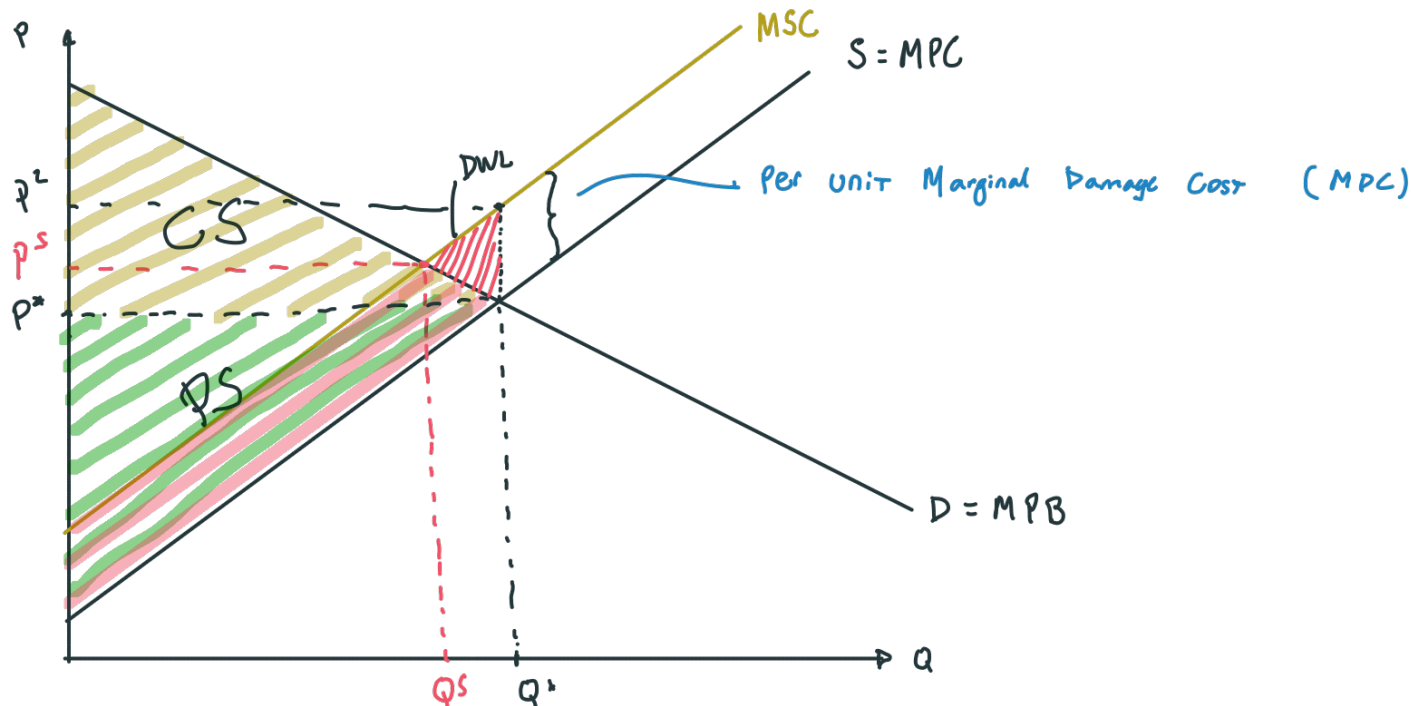
ECON 101

TA Worksheet Module 9 (Externalities and Public Goods)

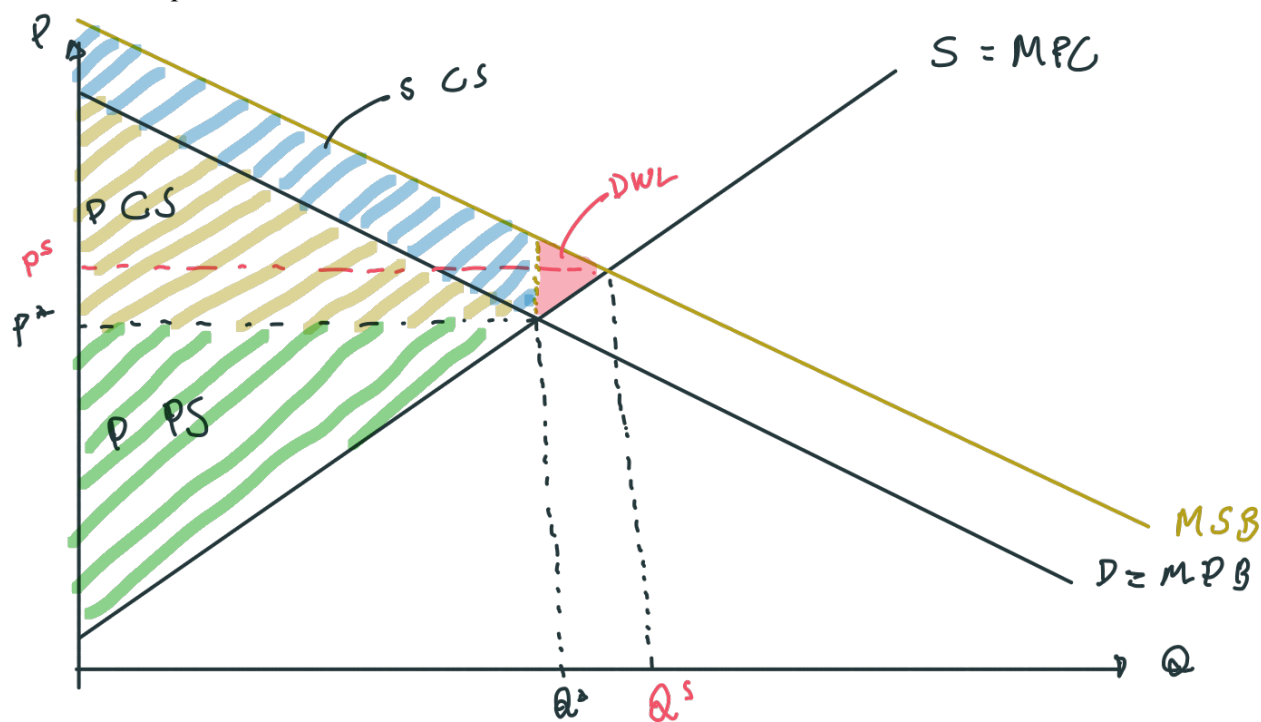
Name: _____

Date: _____

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).

SODA TAX (SUGAR CONTENT). ^{UC} Expected: make consumers consume less sugar. UC: low-income HH affected more because they spend a higher % of income. PPL switch to close subst.

Food labeling if high sugar/fat. UC: bundling + switch to unlabeled products.

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!

you using others using	RIVAL?	EXCLUDABLE?	Examples
Public Good:	X	X	e.g: fireworks, national park, wikipedia
Private Good:	✓	✓	e.g: phones, food
Club Goods:	X	✓	e.g.: gym, wifi.
Open - Access:	✓	X	e.g: SPORTS COURTS AT PUBLIC PARKS.

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 problem as cable is non-excludable.
for the apartment.
Can enjoy benefits w/o paying.

6. Consider the market below.

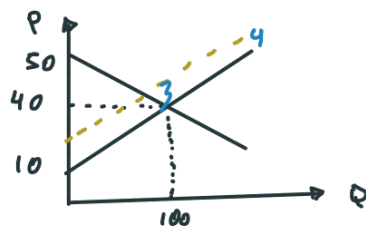
Market Demand: $P = 50 - Q/10$

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

$$50 - \frac{Q}{10} = 10 + \frac{3}{10}Q \Leftrightarrow 400 = 4Q$$

$$Q = 100 \text{ and } P = 40. (P^*, Q^*) = (40, 100)$$

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



$$CS = 500$$

$$PS = 1500$$

$$TS = 2000$$

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

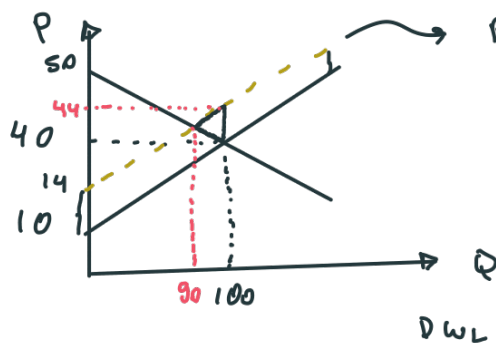
as it $P = P_s + 4$ (higher cost)

$$= 14 + \frac{3}{10}Q$$

So $50 - \frac{Q}{10} = 14 + \frac{3}{10}Q \Leftrightarrow 360 = 4Q \Leftrightarrow Q^* = 90$

$$P^* = 41$$

c. Calculate the deadweight loss created by this externality.

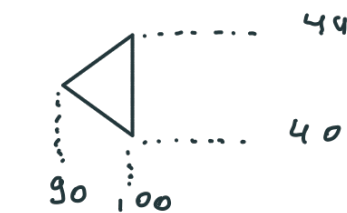


plug 100 into

$$P = P_s + 4$$

$$\text{So } P = 14 + 30$$

$$P = 44$$



is

$$\frac{4 \cdot 10}{2} = 20$$