Homework 6

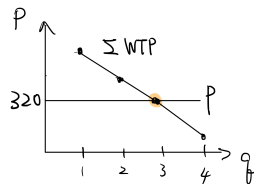### Hsien-Chen Chu T09303304 Econ1

In this sheet the problem sets are answered sequentially.

1. **3 Surveillance Cameras.**
   Expl.: Find the intersection of the $\sum WTP$ and the price of an additional camera. Simply displayed by graph:

2. (a) Welfare Analysis:

	No Subsidy	$2 Subsidy	Change
Consumer Surplus	$A + B$	$A + B + D + F + H$	$D + F + H$
Producer Surplus	$D + E$	$B + C + D + E$	$B + C$
Gov Revenue	0	-(B+C+D+F+H+G)	-(B+C+D+F+H+G)
Total Surplus	$A + B + D + E$	$A + B + D + E - G$	$-G$

   (b) Yes. Even though the subsidy makes both consumers and producers better off, **it still causes the DWL $= -G$.**

3. **(A)** Refer to Figure 1. **Supply 1 and Demand 1** minimize the DWL from a tax.
   Expl.: The size of DWL depends on <u>the change of quantity supplied and demanded</u> caused by Tax, which is exactly the essence of checking the Elasticity of Supply and Demand. Basically, the smaller(greater) the elasticity is, the smaller(greater) the DWL is. In this case, Supply 1 and Demand 1 each holds a relatively smaller elasticity.

4. **(C)** A video available on a website that allows free download is a **club good**.
   Expl.: **Non-rival**(everyone can download videos at the same time) but **excludable**(those who don't have Wi-Fi are excluded).

5. **(C)** A concert in a crowded auditorium is **excludable and rival** in consumption.
   Expl.: **Excludable**(pay the ticket price to get in) and **rival**(in a crowded auditorium, one's getting in reduces another person's getting in).

6. **(D)** The free-rider problem exists for goods that are **non-excludable**.
   Expl.: Since people cannot be excluded from enjoying the benefits of public goods, individuals may withhold paying for the goods, expecting that others will pay for them.