

Var. B

1. [1.5 points]

Consider the following curves.

Supply:  $P = \frac{1}{6}Q$

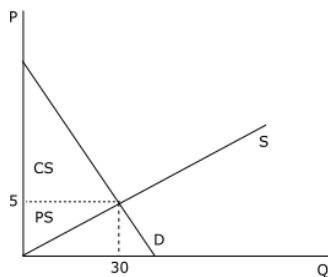
Demand:  $P = 125 - 4Q$

- (a) Calculate market equilibrium price  $P^*$  and quantity  $Q^*$ .
- (b) Given the result from part (a) illustrate graphically consumer surplus and producer surplus.
- (c) Suppose that the government imposes price ceiling at the level  $(P^* - 1)$ , i.e. firms can not charge prices higher than  $(P^* - 1)$ . Is the new equilibrium quantity higher or lower?

(a)

$$P = \frac{1}{6}Q$$
$$P = 125 - 4Q \Rightarrow \frac{1}{6}Q = 125 - 4Q \Rightarrow \frac{25}{6}Q = 125$$
$$Q^* = 30 \text{ and } P^* = 5$$

(b) CS and PS.



- (c) If there is a price ceiling at the level  $(P^* - 1)$ , i.e. 4, firms will supply lower quantity and not all customers will be satisfied.

2. [1.5 points]

There are two consumers in the economy, Tom and Jerry, and they consume milk (M) and cheese (C). Their utility function are:

$$U^T(M^T, C^T) = 5M + C$$

$$U^J(M^J, C^J) = M + 5C$$

Tom has currently 2 bottles of milk and 4 packages of cheese and Jerry has 6 bottles of milk and 2 packages of cheese.

- Sketch the corresponding Edgeworth box. In the Edgeworth box draw several indifference curves of both agents and mark their initial endowment. Sketch Pareto efficient allocations.

On the picture below the endowment point is denoted E. The set of Pareto efficient allocations is the red line.

