

Quiz #1  
ECNS 432  
Spring 2018

Name \_\_\_\_\_

**1.) Social choice rules (9 points)**

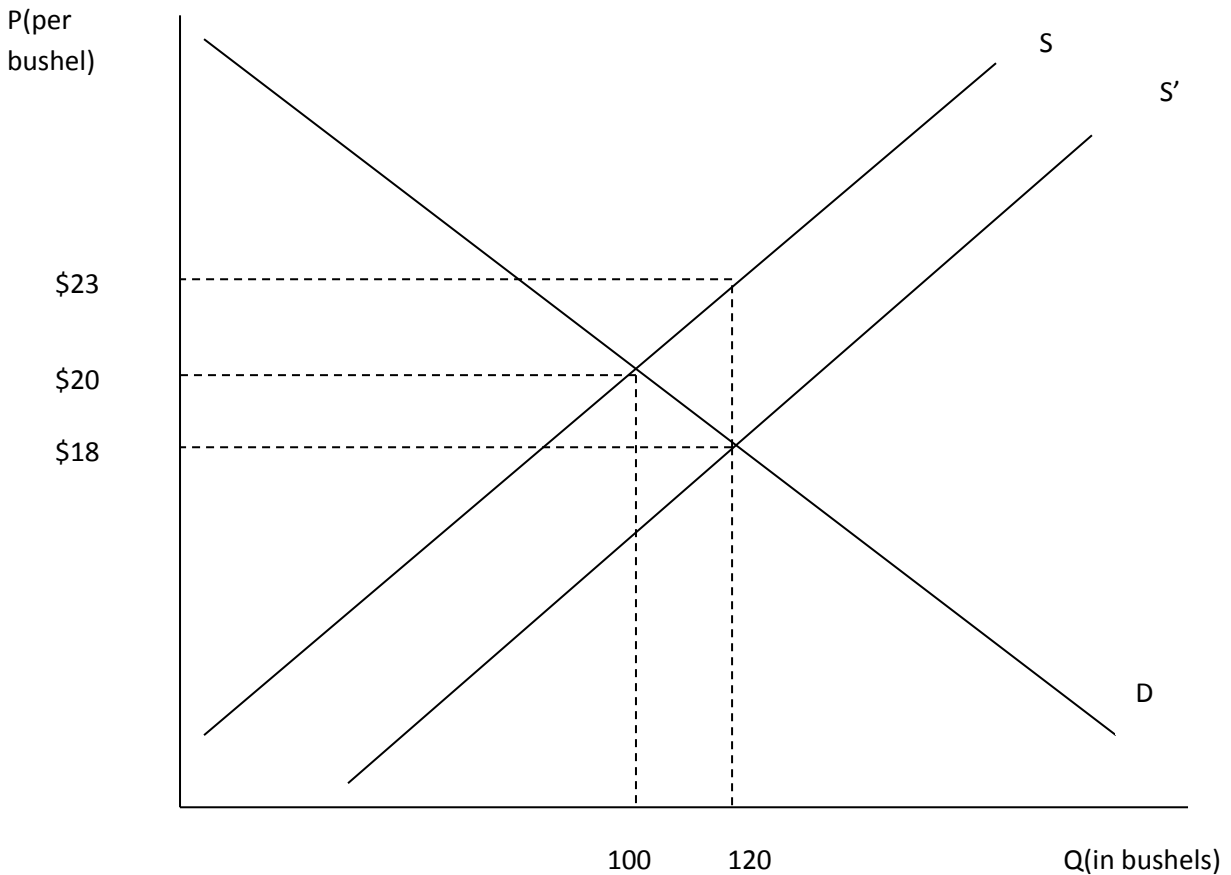
Suppose we have a small inhabited island with three residents and a volcano that generates air pollution. Two people live upwind of the volcano and one person lives downwind. For \$21,000 we can clean up the volcano with a patented “smoke guzzler.” The two upwind people would pay \$1,000 each to get rid of the smoke whereas the downwind person would be willing to pay \$15,000. Consider two plans to finance the “smoke guzzler.” Plan A calls for a tax of \$7,000 per person. Plan B calls for the affected part (the downwind person) to pay \$21,000 and everyone else nothing. Compare each plan to the status quo and indicate society’s choice using (a) the Pareto criterion; (b) majority rule; (c) the compensation principle.

Summary of answers

	PLAN A	PLAN B
Does plan pass under the following choice mechanisms?		
Pareto Criterion	No	No
Majority Rule	No	Yes
Compensation Principle	No	No

## 2.) Welfare Analysis

It is often the case that the government will give subsidies to wheat farmers.



The graph above depicts a per bushel subsidy given to farmers in the wheat market. As shown, the supply curve shifts to the right for the case of a subsidy (i.e. S' represents the supply curve after the subsidy has been given to farmers).

- (5 points) According to this graph, how much is the subsidy per bushel that farmers receive?  
 $\text{Subsidy per bushel} = \$23 - \$18 = \$5$
- (5 points) Shade the area, in the graph above, that represents the dead weight loss.  
 $\text{Shade the triangular area above demand and below the original supply curve and between } q=100 \text{ and } q=120$
- (5 points) What is the **net** cost to consumers of the subsidy program? (Note: consumers are also taxpayers).  
 $\text{Net cost} = (\$5/\text{bushel})(120 \text{ bushels}) - [(\$2/\text{bushel})(100 \text{ bushels}) + (.5)(\$2/\text{bushel})(20 \text{ bushels})] = \$380.$