

Public financeassignment assignment

[Business](#)



Problem 1 (Public goods/Voting) Recommended source: Rosen, Public Finance. Citizens/voters in a hamlet inhabited by only three citizens consider the provision of street light. The marginal benefit curve of each citizen is downward sloping in the amount of street light provided. The cost of providing street light consists of erecting lamp posts and the electricity for illumination.

For part a)-c) of this question, assume the following: All lamps are switched on during the hours of darkness such that the cost of providing street light is linear in the number of lamp posts erected and street light provision is financed by a local poll tax which divides the cost of providing the light equally among the citizens. a) In a graph, determine the optimal provision of light for the hamlet and the optimal provision level from the point of view of each individual citizen. b) Say, the three individually preferred provision levels are put for a vote in a majority voting procedure. Show that there exists an alternative which beats any other alternative if a pairwise vote is taken. c) Does the alternative in part b) which beats any other alternative also fulfil the efficiency condition for the provision of public goods? Explain your answer. d) Suppose that the provision of street lights is taken over by a private company which turns provision of light into a subscription service.

In order to make exclusion credible, the company employs a scanning device which ensures that the light will only come on when a subscriber moves underneath a lamp post. The subscription fee covers both the cost of erecting lamp posts and the provision of electricity. Discuss whether efficiency would be violated if one of the inhabitants is unwilling to pay the subscription fee!

Problem 2 (Majority Voting/Strategic Behavior)

<https://assignbuster.com/public-financeassignment-assignment/>

Recommended source: Schotter, Microeconomics, chpt. 18 a) Refer to the following preference profiles over the alternatives kindergarden, swimming pool and police station introduced in the lecture:) Show that if successive pairwise votes are taken, there never emerges a winning alternative such that it cannot be beaten by some other alternative and voting could, in principle, go on ad infinitum. b) Suppose that, in order to single out some alternative as the winner nonetheless, a decision is taken in a two step majority voting procedure: In the first round one alternative is put against another alternative and in the second round the first round winner is put for a vote against the remaining alternative.

The winner of the second round vote is declared overall winner. ba) For all possible combinations of second round votes over pairs of alternatives, write down the winning alternative. bb) Write down all possible combinations of pairs of alternatives in the first round of voting. For each pair do the following: For the first alternative, write down the overall winning alternative if the first alternative would make it to the second round of voting. Do the same for the second alternative of the pair.

How should voters in the first round of voting decide between the alternatives they face? cc) If voter 3 is the chair (or “ agenda setter”) and can decide which alternatives to put for a vote in the first round of voting: Which pair should she pick? Problem 3 (Majority voting v. Borda vote count) (Recommended source: Schotter, Microeconomics, chapter 18). The board of Moot Oil has to decide which of four alternative oil field developments, A, B, C or D should be realized.

The board consists of three voting members. The oil fields are located in different regions of the world and offer different prospects in terms of expected profitability and riskiness. Because the board members differ in their perceptions and their attitudes towards risk and they have different personal stakes in the alternatives, their preferences over those alternatives differ as well. The preferences of the board members are as follows (where ">" signifies "preferred to"). Director 1: $A > B > C > D$

Director 2: $B > C > D > A$ Director 3: $C > D > A > B$

a) Moot oil uses majority voting by the board as the way to take its decisions. Construct the preference order of Moot Oil over these four alternatives as follows: For two alternatives x and y , Moot Oil prefers x to y if at least two of its three board members prefer x over y . Is the preference order of Moot Oil transitive? (Hint: A preference order is transitive if whenever $x \succ y$ and $y \succ z$ are true then $x \succ z$ is also true.)

a) Assume instead that Moot Oil uses a Borda vote count to take its decisions. Which alternative wins if all directors vote honestly? Is there a way for at least one of the directors to get an outcome he prefers (such as alternative B) by lying?

bb) Say, Moot Oil's preference order is obtained by adding up (honestly reported) Borda vote counts of its directors. In what sense can it be said that Moot Oil's preference between the "honest" Borda winner in ba) and alternative B depends on "irrelevant" alternatives?