

1. How can majority voting produce economically inefficient outcomes? Give a numerical example that leads to the rejection of a public good.

Ans: The problem with majority voting is that it does not take into account the strength of preferences for or against a choice. As a consequence, economically inefficient outcomes may result. For example, assume there are only three voters on a tax issue, such as more funding for public schools. The government places a cost of \$600 on this improved funding – a tax of \$200 per voter. Suppose the perceived benefit for two of the voters is only \$100 because they have no school-aged children. A third voter estimates the benefit to be \$600 because she has school-aged children. The cost for each voter in terms of increased taxes is \$200. Total benefits for the three voters are \$800 while the costs are \$600. In this case, the benefits outweigh the cost for the society of three when the strength of preferences as measured in dollars is taken into account. However, for two of the voters (a majority), the costs outweigh the benefits and they vote against the school funding increase and defeat the measure.

Page: 373-375

Learning Objective: 16.1

2. How can political logrolling lead to inefficient economic choices? Give a numerical example that leads to the acceptance of two public goods.

Ans: Assume there are only three voters and two public projects to be voted on. With the first project, voter A would get \$500 worth of benefits; voter B, \$200 worth of benefits; and voter C, \$100 worth of benefits. With the second project, voter A would get \$200 worth of benefits; voter B, \$500 worth of benefits; and voter C, \$100 worth of benefits. Each tax issue would impose \$300 in tax costs on each voter. Because each project has a total cost (\$900) that exceeds its total benefit, neither is economically efficient.

In majority voting, both projects would be rejected. However, if voter A and B engage in political logrolling by supporting each other's favoured project, both projects would be accepted. In this case, logrolling turns the efficient outcome that would arise under majority voting into an inefficient one.

Page: 375

Learning Objective: 16.1

3. Explain two ways inefficiencies associated with majority voting may get resolved.

Ans: First, special-interest groups can form and lobby for funding of a public good that has net benefits for society. Second, political logrolling can be used. In this case, votes are traded to obtain a favourable outcome on decisions that might otherwise be adverse. If the favourable outcome results in funding for a public good that has net benefits for society, then the economic inefficiencies from majority voting will be overcome.

Page: 374-375

Learning Objective: 16.1

4. Answer the next four questions on the basis of the following table which shows the rankings of the public goods by three voters: A, B, and C.

<u>Public good</u>	<u>Voter A</u>	<u>Voter B</u>	<u>Voter C</u>
More police protection	1	2	3
More fire protection	3	1	2
More schools	2	3	1

(a) What will be the choice between more police protection and more fire protection?

(b) What will be the choice between more schools and more police protection?

(c) What will be the choice between more fire protection and more schools?

(d) What do the rankings in the table indicate about choices made under majority rule?

Ans: (a) A majority of voters favours more fire protection.

(b) A majority of voters favours more police protection.

(c) A majority of voters favours more schools.

(d) Majority voting can produce inconsistent choices. Here, fire protection is preferred over police protection and police protection is preferred over schools, but schools are preferred over fire protection.

Page: 375-377

Learning Objective: 16.1

5. Answer the next four questions on the basis of the following table which shows the rankings of the public goods by three voters: A, B, and C.

<u>Public good</u>	<u>Voter A</u>	<u>Voter B</u>	<u>Voter C</u>
New park	1	2	3
New bridge	3	1	2
New school	2	3	1

- (a) What will be the choice between a new park and a new bridge?
- (b) What will be the choice between a new school and a new park?
- (c) What will be the choice between a new bridge and a new school?
- (d) What do the rankings in the table indicate about choices made under majority rule?

Ans: (a) A majority of voters favours a new bridge.

(b) A majority of voters favours a new park.

(c) A majority of voters favours a new school.

(d) Majority voting can produce inconsistent choices. Here, a new bridge is preferred over a new park and a new park is preferred over a new school, but a new school is preferred over a new bridge.

Page: 375-377

Learning Objective: 16.1

6. Explain the paradox of voting that is illustrated in the table below in choices between the same expenditure on three different public goods. The numbers under each name indicate the voting preferences (first, second, or third choice) of each of the three citizens in the society.

<u>Public good</u>	<u>Hickory</u>	<u>Dickory</u>	<u>Dock</u>
Hospital	1	2	3
Roads	3	1	2
Police	2	3	1

Ans: The voting paradox is illustrated by the different voting decisions. In a choice between spending on a hospital and spending on roads, the majority prefers to spend money on roads. In a choice between spending money on roads or police, the majority prefers to spend money on police. Thus it would seem that expenditures for police are the most preferred because that spending is preferred over roads, and, in turn, spending on roads is preferred over hospital spending. However, in a choice between spending on police or a hospital, the majority prefers spending on a hospital. Voter preferences are inconsistent in this case.

Page: 375-377

Learning Objective: 16.1

7. What is the median-voter model and what are two implications from it?

Ans: The median-voter model indicates that the median voter in a majority rule system will likely determine election results. In a voting situation, there are often extreme positions. Those individuals holding the middle position on an issue will have the most influence on the outcome because they represent the best option for the two extreme groups. One extreme group will not want what the other extreme group wants, and thus will support a middle position so that one extreme does not win over the other extreme.

There are two basic implications from the median voter model. First, the size of government (and its services) will be determined by the preferences of the median voter. Second, people may move to political jurisdictions where the median voter's preferences are closer to their own (to obtain better schools or lower taxes).

Page: 377-378

Learning Objective: 16.1

8. Three people on a city council have three different spending proposals for snow removal. Mitchell wants to spend \$2 million to purchase more trucks and equipment. Williams wants to spend \$1 million and purchase half the equipment. Symmes doesn't want to purchase any new equipment, but prefers to spend \$200,000 for additional stocks of de-icing chemicals. What does the median-voter model suggest will happen in this case? Explain the likely outcome.

Ans: The median-voter model suggests that the \$1 million proposal will be accepted as the compromise position. In a choice between a \$1 and \$2 million choice, Williams and Symmes (who prefers less spending) will want the \$1 million choice. In a choice between the \$1 million and \$200,000 proposal, Williams and Mitchell (who prefers more spending) will want the \$1 million choice. The median position on an issue will most likely be selected.

Page: 377-378

Learning Objective: 16.1

9. What are five sources of government failure?

Ans: One reason for this type of failure is that there can be a special-interest effect whereby a small number of people benefits from a government program at the expense of a large number of persons who individually suffer small losses. The special-interest effect is most evident in pork-barrel politics. A second reason for inefficiencies is the appeal to government for special benefits at taxpayers' or someone else's expense called rent-seeking behaviour. Corporations, trade groups, and other organizations lobby government to obtain policies and contracts that provide them with higher profits or income than would occur under competitive market conditions. A third reason for the failure is that the benefits from a government program or project are often clear to citizens or groups, but the costs are frequently hidden. A fourth reason for inefficiencies in government is that voters or elected representatives have to accept political choices that are limited and bundled, which means government legislation forces voters or elected representatives to take the bad programs with the good programs. A fifth reason is that the incentives for economic efficiency tend to be stronger in the private sector because there is a profit incentive, but there is not a similar incentive in the public sector. As a result, there tends to be more government bureaucracy and less efficient use of scarce resources.

Page: 378-380

Learning Objective: 16.2

10. Explain the difference between the special interest effect and rent-seeking behaviour.

Ans: Special interests and rent-seeking may promote the interests of a small group at the expense of society at large. The special-interest effect is a situation where a small number of people will receive large gains at the expense of a much larger number of people who individually suffer small losses. The small group will be well informed and highly vocal on the issue and press politicians for approval. The large number of people who will each suffer only small losses will not have the incentive to be informed or feel strongly about the issue. The result is that the politician will support the special interest program, whose supporters will vote in their favour, and the politician will ignore the majority who do not feel strongly about the issue.

Rent-seeking behaviour occurs when government action results in a transfer of wealth at society's or someone else's expense. In this case, the term "rent" means any profit or income to a business, a resource owner, or other organization that is above that which would be paid to the individual, corporation or group under competitive market conditions. The government is able to distribute the rent through laws, rules, hiring practices, or purchases. Some examples of rent seeking include occupational licensing beyond that needed to protect consumers, tariffs on imported products designed to protect businesses from foreign competition, and tax breaks or tax subsidies for particular businesses.

Page: 378-379

Learning Objective: 16.2

11. Give three different examples of rent-seeking behaviour.

Ans: The examples can vary but the following three are possible: (a) farm organizations that lobby the Federal government for an increase in spending on agricultural price supports from which their members will benefit; (b) automobile manufacturers that seek stricter quotas or voluntary export restraints on foreign car imports that result in increased sales of domestic cars; and (c) the home construction industry seeking tax credits for first-time home buyers that increase the demand for new homes.

Page: 379

Learning Objective: 16.2

12. Why would private business be considered more efficient than public agencies?

Ans: In the private sector, there are clear incentives in the form of prices, wages, and profits that serve to direct resource allocation and encourage economic efficiency. These incentives or signals that encourage productive and allocative efficiency in private business are missing from the public sector. What is produced by the public sector is not sold in the market, so it is difficult to determine the value of output. Also, there is little incentive to reduce costs because government agencies are not concerned with profits. This problem can lead to larger, more expensive government units. Compounding this problem are the influences of special interests and rent-seekers that expand or sustain government agencies or programs for their benefit.

Page: 380

Learning Objective: 16.2

13. What are the problems encountered in any strict application of benefits-received and ability-to-pay principles of taxation?

Ans: Taxation based on benefits received will result in low-income people being excluded from some benefits because they cannot afford to pay the tax or fee for some public services. For example, charging a large fee to the users of public libraries rather than fund them out of general tax revenues would be an example of a benefits-received basis for taxation. This tax or fee might prevent low-income groups from using the library. It is hard to separate the social from private benefits in such a case.

However, problems can also arise in strict application of ability-to-pay taxation. A strict application of this principle would mean taxes solely based on income or wealth. It would mean that those who were “able to pay” (however defined) would pay taxes for everyone else regardless of benefits received. Thus, only high-income users of highways, for example, would have to pay gasoline taxes. If substantial groups of individuals received public benefits of one kind or another without being responsible for payment of taxes to support them, it would encourage wasteful use of public goods. It would also discourage work and investment to raise income to the point where one was “able to pay taxes.” That is hardly an incentive to work or expand income and output.

Page: 381

Learning Objective: 16.3

14. Explain and evaluate this statement: “No tax on income can be a just tax unless it leaves individuals in the same relative condition in which it found them.”

Ans: This statement is saying that the only just tax is one which does not change the rank of individuals with respect to their income, i.e., the highest 10% of income earners before taxes will still have the highest 10% after-tax income. Whether or not you believe this is “just” is a matter of opinion. Fairness is a normative, not a positive, concept. Some would say that the only just tax is one that leaves everyone situated in equal positions after taxes. A true Marxist might argue that you tax each “according to his ability and give to each according to his needs.” There are many different views about what is just when it comes to taxes.

Page: 381-382

Learning Objective: 16.3

Unauthorized



15. Can economic analysis precisely determine the proper levels of government spending and taxation? In your answer explain the problems in using cost-benefit analysis.

Ans: It is theoretically possible to determine the proper amount of government spending and the optimal quantity of a public good. In theory, the demand for a public good can be found by adding the prices that people collectively are willing to pay for the last unit of the public good at each particular quantity. Then, the quantity and price at which the collective amount demanded matches the amount supplied will be the equilibrium or “optimal” output level.

In terms of cost-benefit analysis, this means that the public is equating the marginal benefit received from government spending to its marginal cost. Cost-benefit analysis aids in clear thinking about the public sector, but both benefits and costs of public goods are partially spillovers or externalities that are hard to measure. The text's example of the potential benefits and costs associated with a new highway in an urban area provides a good illustration of the practical difficulties involved in determining the optimal level of spending. Of course, the other difficulty results from our system of representative democracy. Individuals do not vote on every single project even if the collective benefits and costs could be accurately measured. The second part of the first question asks about the proper level of taxation. This would be impossible to determine because the criteria used to determine the best level of taxation actually are often contradictory and so in the end, “proper” or “optimal” is a normative judgment. If “proper” meant that taxes should be based only on benefits received, it could be possible to achieve such a level using economic analysis although there would still be significant measurement problems. However, economists also believe that taxes should be based to some extent on “ability-to-pay” which rarely conforms to the benefits received criteria of taxation. Therefore, while theoretically it is possible to determine the optimal level of spending based on benefits received, it would not be possible to determine the combination of “proper” or “optimal” taxation necessary to finance the spending.

Page: 373-378, 380-381

Learning Objective: 16.1, 16.3

16. Evaluate: “A tax system in which those with higher incomes pay higher amounts of taxes is progressive.”

Ans: The tax system described is not necessarily progressive. It could just as likely be a proportional system where everyone pays the same rate of taxes as a proportion of income. Someone with higher income under such a system would pay higher amounts of taxes but the tax rate would be the same as that of someone with lower income. A progressive tax system is one in which those with higher incomes pay higher rates of tax as a proportion of their incomes.

Page: 382

Learning Objective: 16.3

17. Answer the next three questions on the basis of the following data:

<u>Taxable income</u>	<u>Total tax</u>
\$10,000	\$0
20,000	1,000
30,000	3,000
40,000	6,000
50,000	10,000
60,000	15,000

- (a) What will your average tax rate be if your taxable income is \$50,000?
- (b) If your taxable income increases from \$30,000 to \$40,000, what will your marginal tax rate be?
- (c) What type of tax is represented by the tax schedule (regressive, proportional, or progressive)?
- Ans: (a)  $20\% [(\$10,000/\$50,000) \times 100]$ .
- (b)  $30\% [(\$3,000/\$10,000) \times 100]$ .
- (c) Progressive.

Page: 382

Learning Objective: 16.3

18. Answer the next three questions on the basis of the following data:

<u>Taxable income</u>	<u>Total tax</u>
\$5,000	\$0
10,000	500
15,000	1,000
20,000	2,000
25,000	4,000
30,000	8,000

- (a) What will your average tax rate be if your taxable income is \$25,000?
- (b) If your taxable income increases from \$15,000 to \$20,000, what will your marginal tax rate be?
- (c) What type of tax is represented by the tax schedule (regressive, proportional, or progressive)?
- Ans: (a)  $16\% [(\$4,000/\$25,000) \times 100]$ .  
 (b)  $20\% [(\$1,000/\$5,000) \times 100]$ .  
 (c) Progressive.

Page: 382

Learning Objective: 16.3

19. In the following table are five levels of taxable income and the amount that would be paid at each of the five levels under three tax laws: X, Y, and Z. Compute for each of the three tax laws the *average* rate of taxation at each of the four remaining income levels and indicate whether the tax is regressive, proportional, or progressive.

<u>Income</u>	<b>Tax X</b>		<b>Tax Y</b>		<b>Tax Z</b>	
	<u>Tax paid</u>	<b>Average tax rate %</b>	<u>Tax paid</u>	<b>Average Tax rate %</b>	<u>Tax paid</u>	<b>Average tax rate %</b>
\$10,000	\$400	4%	\$500	5%	\$300	3%
20,000	800	_____	700	_____	800	_____
30,000	1,200	_____	900	_____	1,500	_____
40,000	1,600	_____	1,100	_____	2,400	_____
50,000	2,000	_____	1,300	_____	3,500	_____
<b>Type of Tax:</b>	_____	_____	_____	_____	_____	_____

Ans:

<u>Income</u>	<b>Tax X</b>		<b>Tax Y</b>		<b>Tax Z</b>	
	<u>Tax paid</u>	<b>Average tax rate %</b>	<u>Tax paid</u>	<b>Average Tax rate %</b>	<u>Tax paid</u>	<b>Average tax rate %</b>
\$10,000	\$400	4%	\$500	5%	\$300	3%
20,000	800	4	700	3.5	800	4
30,000	1,200	4	900	3.0	1,500	5
40,000	1,600	4	1,100	2.8	2,400	6
50,000	2,000	4	1,300	2.6	3,500	7
<b>Type of Tax:</b>	Proportional		Regressive		Progressive	

Page: 382

Learning Objective: 16.3

20. Assume a provincial government levies a 5% sales tax on all consumption expenditures. Consumption expenditures at six income levels are shown in the table below. Compute the sales tax paid and the average tax rate at these incomes in the table.

<u>Income</u>	<u>Consumption expenditures</u>	<u>Sales tax paid</u>	<u>Average tax rate, %</u>
\$16,000	\$15,000	\$750	4.7
20,000	17,000	850	4.3
24,000	20,000	_____	_____
28,000	22,000	_____	_____
32,000	25,000	_____	_____
36,000	27,000	_____	_____

What type of tax is the sales tax in this case? Why?

Ans:

<u>Income</u>	<u>Consumption expenditures</u>	<u>Sales tax paid</u>	<u>Average tax rate, %</u>
\$16,000	\$15,000	\$750	4.7
20,000	17,000	850	4.3
24,000	20,000	1,000	4.2
28,000	22,000	1,100	3.9
32,000	25,000	1,250	3.9
36,000	27,000	1,350	3.8

A regressive tax because the average tax rate falls as income rises.

Page: 382

Learning Objective: 16.3

21. Why are sales taxes regressive?

Ans: A regressive tax is one in which higher income individuals pay a lower rate of tax as a proportion of their income. Although all individuals pay the rate of tax on purchases under a general sales tax, those with lower incomes spend a larger proportion of their income than do those with higher incomes. Therefore, the rate of tax as a proportion of income is higher for those with lower incomes. Higher income individuals save a larger proportion of their income and sales taxes are not levied on savings. Therefore, as a proportion of their income, higher income individuals pay less in sale taxes.

Page: 382-383

Learning Objective: 16.3

22. What is rent-seeking behaviour?

Ans: Rent-seeking behaviour occurs when individuals or groups of individuals attempt to restrict trade in order to achieve a gain that will come at the expense of others. Whereas unrestricted trade will lead to mutual gains and increased output to be shared by all, rent-seeking behaviour reduces total gains. The idea of creating gaps in France's railroads would clearly make the entire economy less efficient. The profits to the “bargemen, peddlers, *commissionaires*, and hotel-keepers” are insufficient to justify the loss of efficiency to the economy as a whole.

Page: 384

Learning Objective: Last Word