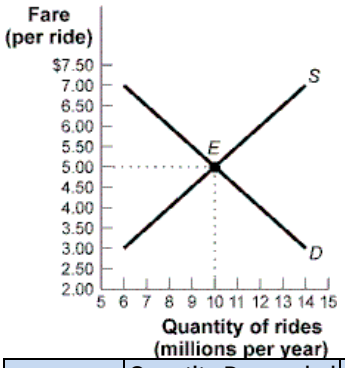
Excise Taxes

Use the graph and table below to answer questions 1-2.



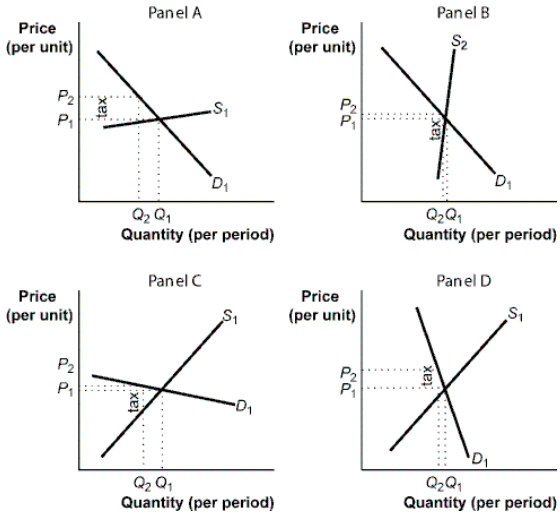
Fare (per ride)	Quantity Demanded (millions of rides per year)	Quantity Supplied (millions of rides per year)
$7.00	6	14
6.50	7	13
6.00	8	12
5.50	9	11
5.00	10	10
4.50	11	9
4.00	12	8
3.50	13	7
3.00	14	6

1. If the government now imposes an excise tax of $4 per ride (causing the supply curve to shift upward by that amount), then the government will collect tax revenues of _____, which might be used for worthwhile purposes. However, there will be a deadweight loss to society of _____ caused by this tax.
   a. $9 million; $1 million
   b. $16 million; $2 million
   c. $21 million; $6 million
   d. $24 million; $8 million
   e. $12 million; $4 million

2. If the government now imposes an excise tax of $3 per ride (causing the supply curve to shift upward by that amount), then the government will collect tax revenues of _____, which might be used for worthwhile purposes, but there will be a deadweight loss to society of _____ caused by this tax.
   a. $9 million; $1 million
   b. $16 million; $2 million
   c. $21 million; $4.5 million
   d. $24 million; $6 million
   e. $12 million; $4 million

3. The incidence of a tax refers to:
   a. a measure of the revenue the government receives from the tax.
   b. who writes the check to the government.
   c. the share of the tax paid by consumers and the share paid by sellers.
   d. a measure of the deadweight loss from the tax.
   e. the price elasticity of demand after the tax is paid.

Use the graphs below to answer questions 4-6.



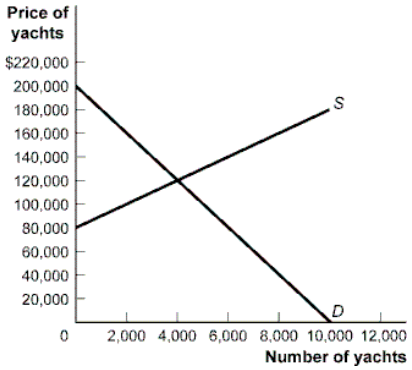
4. All other things unchanged, when a good or service is characterized by a relatively elastic supply, as shown in Panel _____, the greater share of the burden of an excise tax imposed on it is borne by _____.
   a. A; buyers
   b. B; sellers
   c. B; buyers
   d. A; sellers
   e. D; sellers

5. All other things unchanged, when a good or service is characterized by a relatively inelastic demand, as shown in panel _____, the greater share of the burden of an excise tax imposed on it is borne by _____.
   a. C; buyers
   b. C; sellers
   c. D; sellers
   d. D; buyers
   e. B; sellers

6. Based on the figure, producers are likely to bear more of the burden of an excise tax in the situation(s) illustrated by Panels:
   a. A and B.
   b. A and C.
   c. B and D.
   d. B and C.
   e. D only.

7. Suppose the price elasticity of demand for yachts equals 4.04, while the price elasticity of supply for yachts equals 0.22. If Congress reinstates a luxury tax on yachts, how will the burden of the tax be divided?
   a. Yacht buyers will pay the entire tax while yacht builders will pay no tax at all.
   b. Yacht buyers will pay a larger share than yacht builders.
   c. Yacht builders and buyers will pay an equal share.
   d. Yacht builders will pay the entire tax while yacht buyers will pay no tax at all.
   e. Yacht builders will pay a larger share than yacht buyers.

Use the graph below to answer questions 8-11.



8. If the government imposes a $60,000 tax on yachts and collects it from the yacht consumers, the _____ curve will shift _____ by _____.
   a. supply; upward; $30,000
   b. supply; upward; $60,000
   c. demand; downward; $30,000
   d. demand; upward; $60,000
   e. demand; downward; $60,000

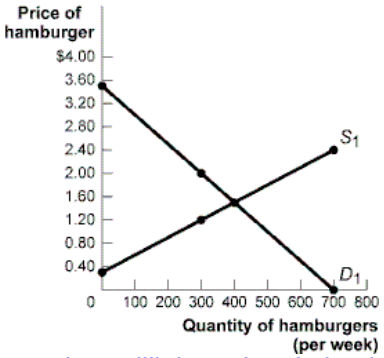
9. A price _____ of _____ will bring about the same price and output in the market for yachts as would an excise tax of $30,000.
   a. ceiling; $80,000
   b. ceiling; $100,000
   c. floor; $120,000
   d. floor; $140,000
   e. ceiling; $30,000

10. If the government imposes a $60,000 tax on yachts (collected from the producers), consumers will pay _____ of the tax and producers will pay _____.
   a. $30,000; $30,000
   b. $40,000; $20,000
   c. $20,000; $40,000
   d. $10,000; $50,000
   e. $0; $60,000

11. A quota of _____ will bring about the same price and output in the market for yachts as would an excise tax of $60,000.
   a. 2,000
   b. 3,000
   c. 4,000
   d. 1,000
   e. 5,000

12. The demand for food is inelastic, so if a tax is levied on the consumers of food, the tax incidence:
   a. is shared, but typically on the consumers more than the producers.
   b. is shared, but typically on the producers more than the consumers.
   c. is typically shared equally between the consumers and the producers.
   d. is entirely upon the producers.
   e. is entirely upon the consumers.

Use the graph below to answer questions 13-15.



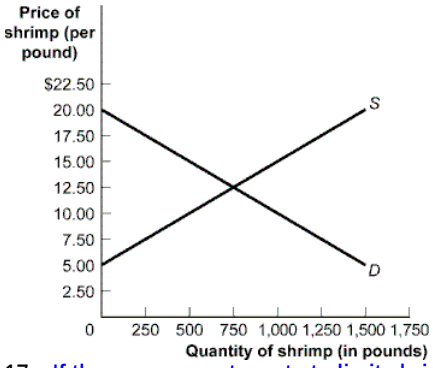
13. The equilibrium price of a hamburger is $1.50 and the equilibrium quantity is 400 hamburgers. If the market is originally in equilibrium and the government then imposes an excise tax of $0.80 per unit of the good sold, consumer surplus will be reduced by:
   a. $175.
   b. $240.
   c. $105.
   d. $90.
   e. $50

14. The equilibrium price of a hamburger is $1.50 and the equilibrium quantity is 400 hamburgers. If the market is originally in equilibrium and the government then imposes an excise tax of $0.80 per unit of the good sold, the deadweight loss associated with the tax will be:
   a. $40.
   b. $240.
   c. $105.
   d. $90.
   e. $100

15. The equilibrium price of a hamburger is $1.50 and the equilibrium quantity is 400 hamburgers. If the market is originally in equilibrium and the government then imposes an excise tax of $0.80 per unit of the good sold, the government's revenue from the tax will be:
   a. $175.
   b. $240.
   c. $105.
   d. $90.
   e. $800

16. The governor wants to impose a $1 excise tax on some good—he doesn't care which—but he does want to minimize the deadweight loss. The deadweight loss will be least when:
   a. both demand and supply curves are elastic.
   b. the demand is elastic and supply is inelastic.
   c. the demand is inelastic and supply is elastic.
   d. both demand and supply are inelastic.
   e. demand is unit elastic and supply is perfectly elastic.

Use the graph below to answer questions 17-18.



17. If the government wants to limit shrimp sales to 500 pounds, it can impose a _____ excise tax on sellers, and the total tax revenue generated will be _____.
    a. $5; $2,500
    b. $7.50; $7,500
    c. $10; $2,500
    d. $2; $1,000
    e. $15; $7,500

18. If the government wants to limit shrimp sales to 250 pounds, it can impose a _____ excise tax on sellers, and the total tax revenue generated will be _____.
    a. $5; $2,500
    b. $7.50; $7,500
    c. $10; $2,500
    d. $2; $1,000
    e. $15; $7,500

19. Maximum total surplus in the market for chocolate occurs when:
    a. total net gain to producers is generated from trading in the market.
    b. all consumers who value chocolate are able to buy chocolate.
    c. all producers are able to sell their chocolate.
    d. the market is in equilibrium.
    e. the price is minimized.

20. If the government imposes a price floor in the market for grapefruit, total surplus:
    a. will increase.
    b. will decrease.
    c. will not change.
    d. may change, but we cannot determine the change without more information.
    e. will be maximized.

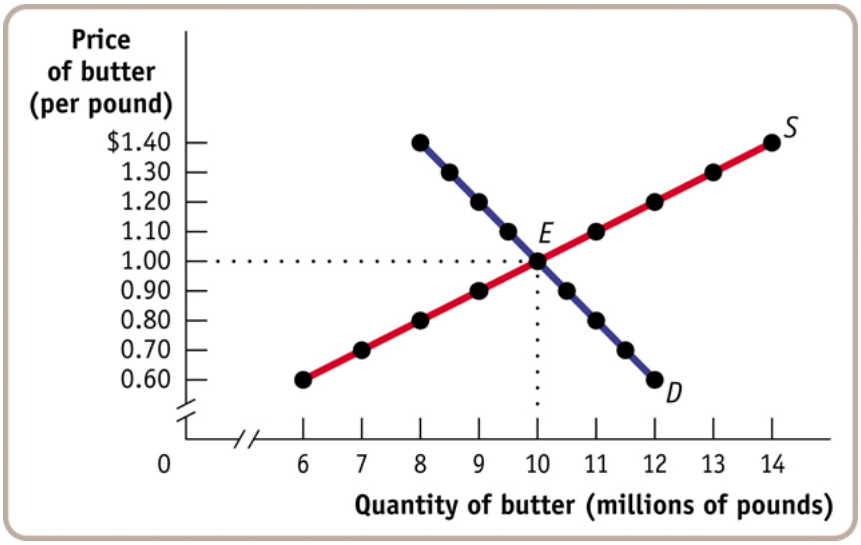
21. Consider the market for butter, shown in the figure below. Assume that the government imposes an excise tax of $0.30 per pound of butter.

    a. What is the price paid by consumers post-tax? $1.20 per pound

    b. What is the price received by producers post-tax? $0.90 per pound

    c. What is the quantity of butter transacted? 9 million pounds

    d. How is the incidence of the tax allocated between consumers and producers? Show on the figure…
    Consumers pay for $0.20 of the tax while producers pay $0.10.



22. The demand for economics textbooks is very inelastic, but the supply is somewhat elastic. What does this imply about the incidence of an excise tax paid for by consumers versus producers? Illustrate with a diagram by labeling: (a) Equilibrium price and quantity, (b) Excise tax wedge, (c) Price paid by consumers post-tax, (d) Price received by producers post-tax.

The fact that demand is very inelastic means that consumers will reduce their demand for textbooks very little in response to an increase in the price caused by the tax. The fact that supply is somewhat elastic means that suppliers will respond to the fall in the price by reducing supply. As a result, the incidence of the tax will fall heavily on consumers of economics textbooks and very little on publishers.

23. The table to the right shows five consumers' willingness to pay for one can of diet soda each as well as five producers' costs of selling one can of diet soda each. Each consumer buys at most one can of soda; each producer sells at most one can of soda. The government asks your advice about the effects of an excise tax of $0.40 per can of diet soda. Assume that there are no administrative costs from the tax.

Consumer	Willingness to Pay
Homer	$0.70
Bart	$0.60
Lisa	$0.50
Marge	$0.40
Maggie	$0.30

Producer	Cost
Alice	$0.10
Rosalie	$0.20
Emmett	$0.30
Edward	$0.40
Jasper	$0.50

a. Without the excise tax, what is the equilibrium price and quantity of soda transacted?
Without the excise tax, Alice, Rosalie, Emmett and Edward sell, and Homer, Bart, Lisa, and Marge buy one can of soda each at $0.40 per can. So the quantity bought and sold is 4.

b. The excise tax raises the price paid by consumers post-tax to $0.60 and lowers the price received by producers post-tax to $0.20. With the excise tax, what is the quantity of soda transacted?
With the excise tax, Alice and Rosalie sell, and Homer and Bart buy one can of soda each. So the quantity sold is 2.

c. Without the excise tax, how much individual consumer surplus does each of the consumers gain? How much with the tax? How much total consumer surplus is lost as a result of the tax?
Without the excise tax, Homer's individual consumer surplus is $0.70 - $0.40 = $0.30, Bart's is $0.60 - $0.40 = $0.20, Lisa's is $0.50 - $0.40 = $0.10, and Marge's is $0.40 - $0.40 = $0.00. Total consumer surplus is $0.30 + $0.20 + $0.10 + $0.00 = $0.60.

With the tax, Homer's individual consumer surplus is $0.70 - $0.60 = $0.10 and Bart's is $0.60 - $0.60 = $0.00. Total consumer surplus post-tax is $0.10 + $0.00 = $0.10. So the total consumer surplus lost because of the tax is $0.60 - $0.10 = $0.50.

d. Without the excise tax, how much individual producer surplus does each of the producers gain? How much with the tax? How much total producer surplus is lost as a result of the tax?
Without the excise tax, Alice's producer surplus is $0.40 - $0.10 = $0.30, Rosalie's is $0.40 - $0.20 = $0.20, Emmett's is $0.40 - $0.30 = $0.10, and Edward's is $0.40 - $0.40 = $0.00. Total producer surplus is $0.30 + $0.20 + $0.10 + $0.00 = $0.60. With the tax, Alice's individual producer surplus is $0.20 - $0.10 = $0.10 and Rosalie's is $0.20 - $0.20 = $0.00. Total producer surplus post-tax is $0.10 + $0.00 = $0.10. So the total producer surplus lost because of the tax is $0.60 - $0.10 - $0.50.

e. How much government revenue does the excise tax create?
With the tax, two cans of soda are sold, so government tax revenue from this excise tax is 2 X $0.40 = $0.80

f. What is the deadweight loss from the imposition of this excise tax?

Total surplus without the tax is $0.60 + $0.60 = $1.20. With the tax, total surplus is $0.10 + $0.10 = $0.20, and government tax revenue is $0.80. So deadweight loss from this excise tax is $1.20 – ($0.20 + $0.80) = $0.20