

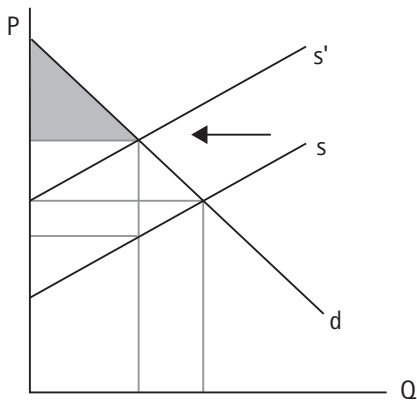


# eLearneconomics: Sales tax incidence (1)

Student response \_\_\_\_\_

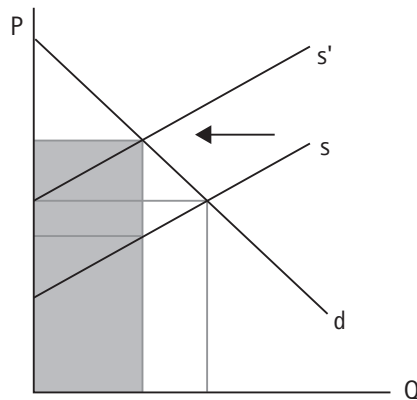
Indicate what the shaded area on each diagram shows, given that a sales tax is imposed.

(a)



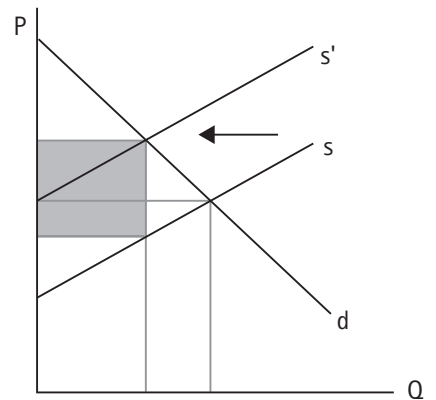
\_\_\_\_\_

(b)



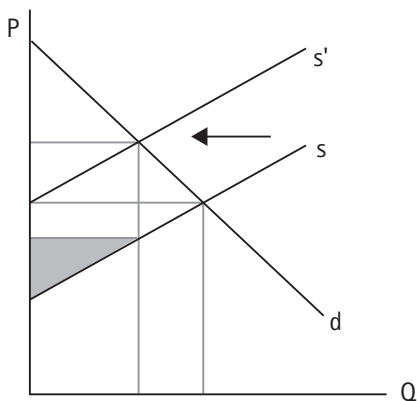
\_\_\_\_\_

(c)



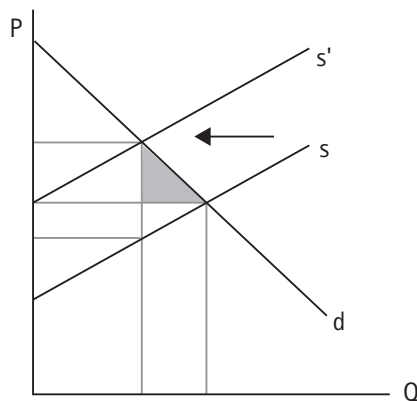
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(d)



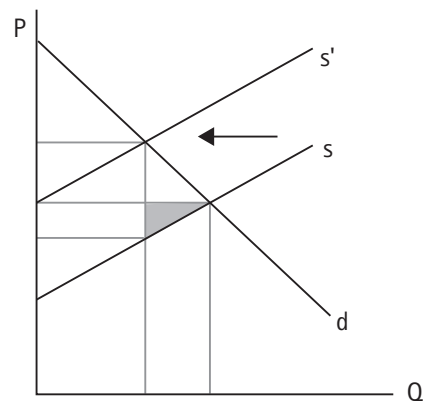
\_\_\_\_\_

(e)



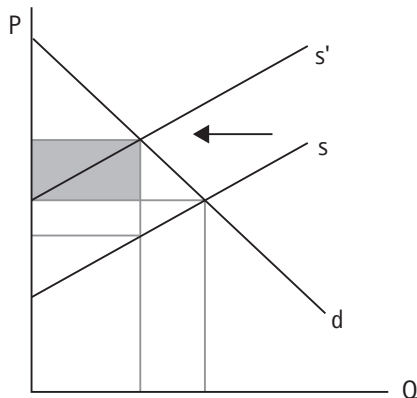
\_\_\_\_\_

(f)



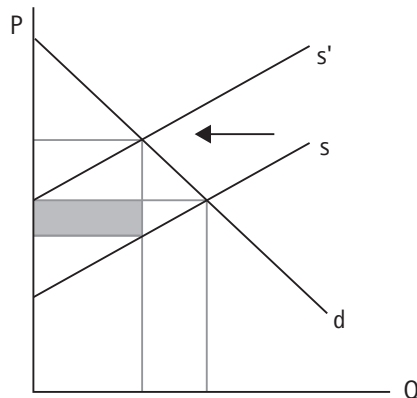
\_\_\_\_\_

(g)



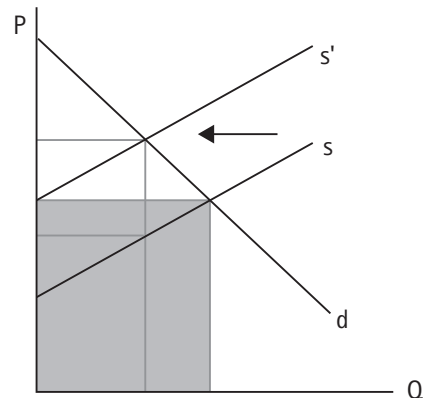
\_\_\_\_\_

(h)



\_\_\_\_\_

(i)



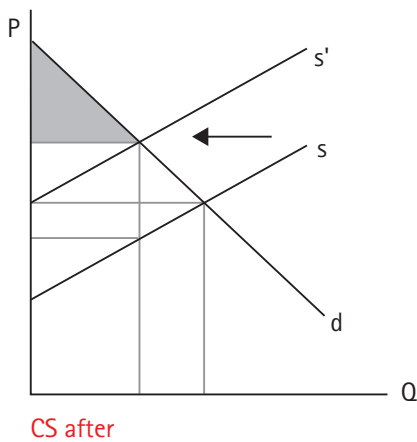
\_\_\_\_\_

# eLearneconomics: Sales tax incidence (1a)

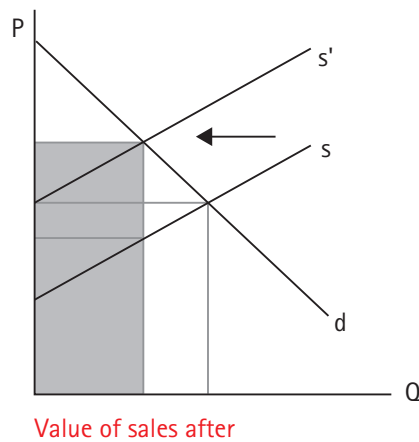
## Solution

Indicate what the shaded area on each diagram shows, given that a sales tax is imposed.

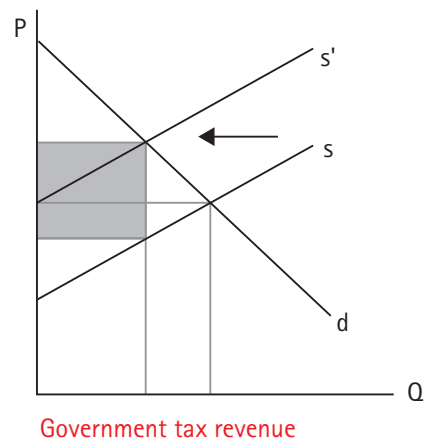
(a)



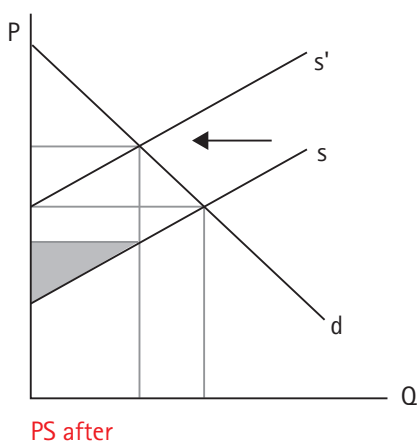
(b)



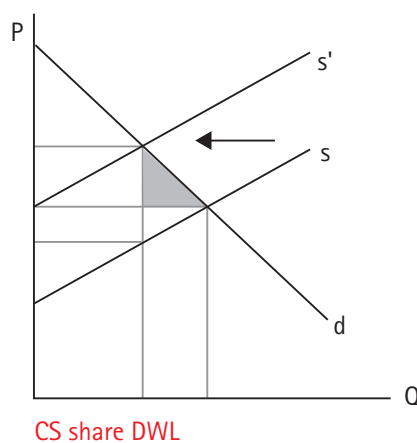
(c)



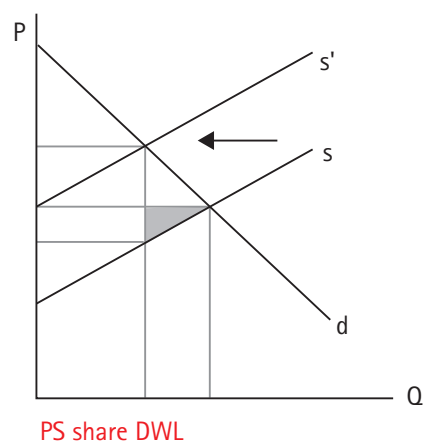
(d)



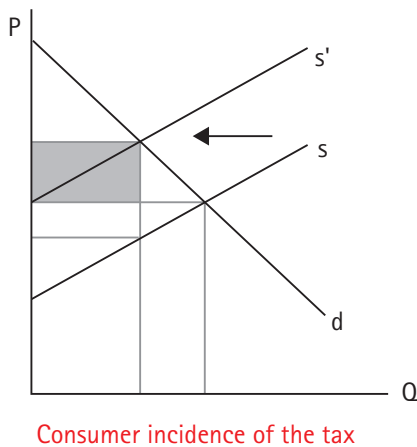
(e)



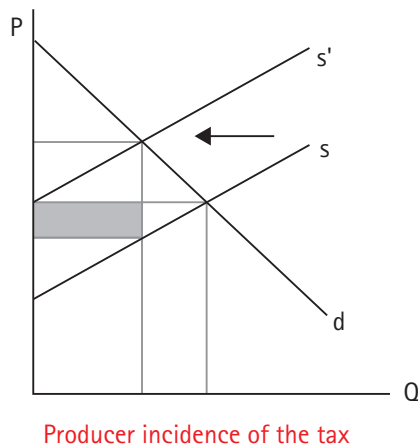
(f)



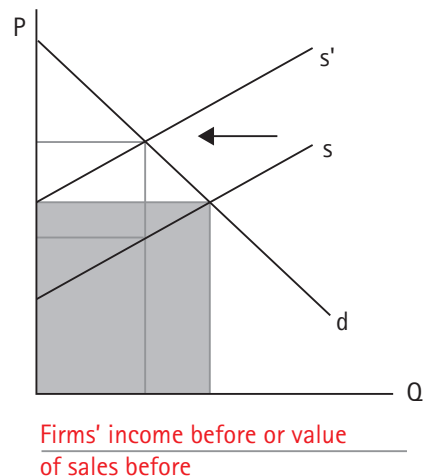
(g)



(h)



(i)



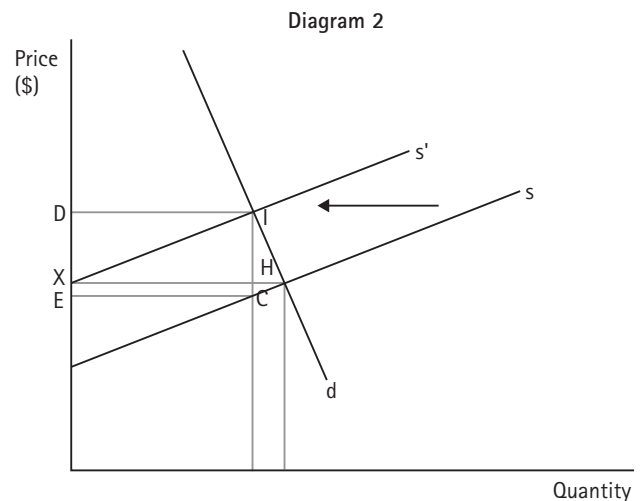
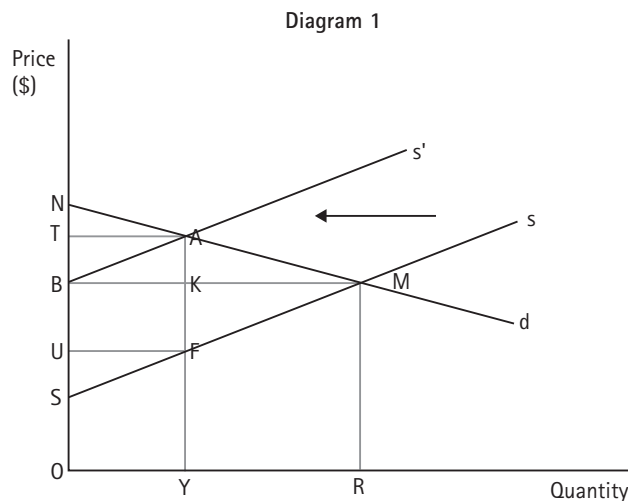


# eLearneconomics: Sales tax incidence (2)

## Student response \_\_\_\_\_

Use the diagrams to complete the following sentences.

- (a) A sales tax incidence (burden) will fall more on consumers if demand is \_\_\_\_\_. This is shown by diagram \_\_\_\_\_, and the area would be represented by the letters \_\_\_\_\_.
- (b) A sales tax incidence (burden) will fall more on producers if demand is \_\_\_\_\_. This is shown by diagram \_\_\_\_\_, and the area would be represented by the letters \_\_\_\_\_.



- (c) Use Diagram 1 to give letters to identify the areas indicated. (CS = consumer surplus, PS = producer surplus, DWL = deadweight loss)

(i) CS before		(ii) CS after	
(iii) Consumer incidence tax		(iv) DWL in total	
(v) PS share DWL		(vi) Total loss of consumer surplus	
(vii) PS before		(viii) PS after	
(ix) Producer incidence tax		(x) CS share DWL	
(xi) Total loss of PS		(xii) Consumer spending before	
(xiii) Consumer spending after		(xiv) Producer revenue before	
(xv) Producer revenue after		(xvi) Government tax revenue	
(xvii) Price paid consumer before		(xviii) Price received producer before	
(xix) Price paid consumer after		(xx) Price received producer after	
(xxi) Quantity sales before		(xxii) Quantity sales after	

- (d) After the tax has been applied, show and clearly label on Diagram 1 the producer incidence of the tax.
- (e) After the tax has been applied, show and clearly label on Diagram 2 the consumer incidence of the tax.

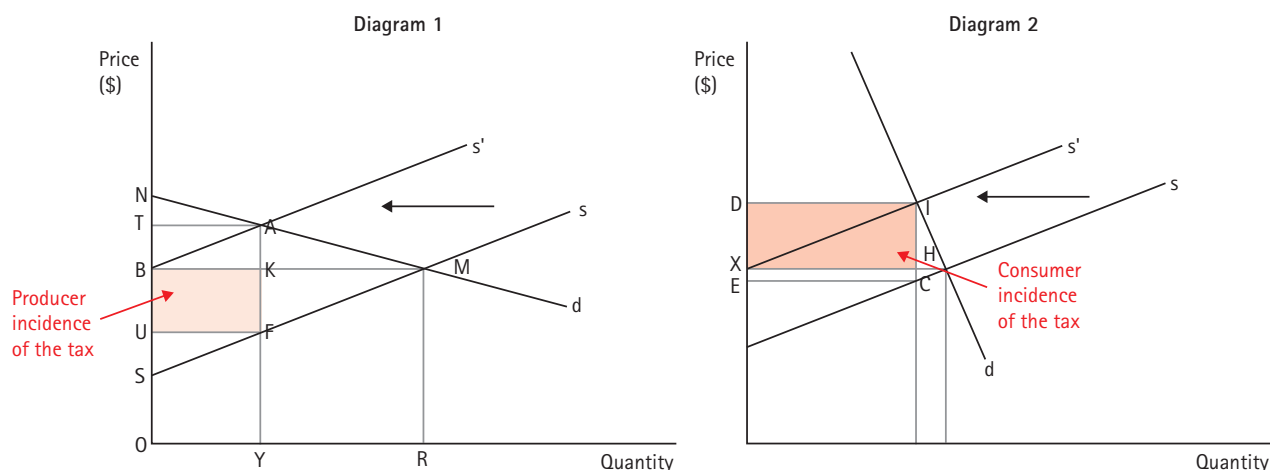
# eLearneconomics: Sales tax incidence (2a)



## Solution

Use the diagrams to complete the following sentences.

- (a) A sales tax incidence (burden) will fall more on consumers if demand is inelastic. This is shown by diagram 2, and the area would be represented by the letters DIHX.
- (b) A sales tax incidence (burden) will fall more on producers if demand is elastic. This is shown by diagram 1, and the area would be represented by the letters FUBK.



- (c) Use Diagram 1 to give letters to identify the areas indicated. (CS = consumer surplus, PS = producer surplus, DWL = deadweight loss)

(i) CS before	BMN	(ii) CS after	TAN
(iii) Consumer incidence tax	TAKB	(iv) DWL in total	MAF
(v) PS share DWL	KMF	(vi) Total loss of consumer surplus	TAMB
(vii) PS before	BMS	(viii) PS after	UFS
(ix) Producer incidence tax	BUFK	(x) CS share DWL	KAM
(xi) Total loss of PS	FUBM	(xii) Consumer spending before	BORM
(xiii) Consumer spending after	TOYA	(xiv) Producer revenue before	BORM
(xv) Producer revenue after	UOYF	(xvi) Government tax revenue	FUTA
(xvii) Price paid consumer before	OB	(xviii) Price received producer before	OB
(xix) Price paid consumer after	OT	(xx) Price received producer after	OU
(xxi) Quantity sales before	OR	(xxii) Quantity sales after	OY

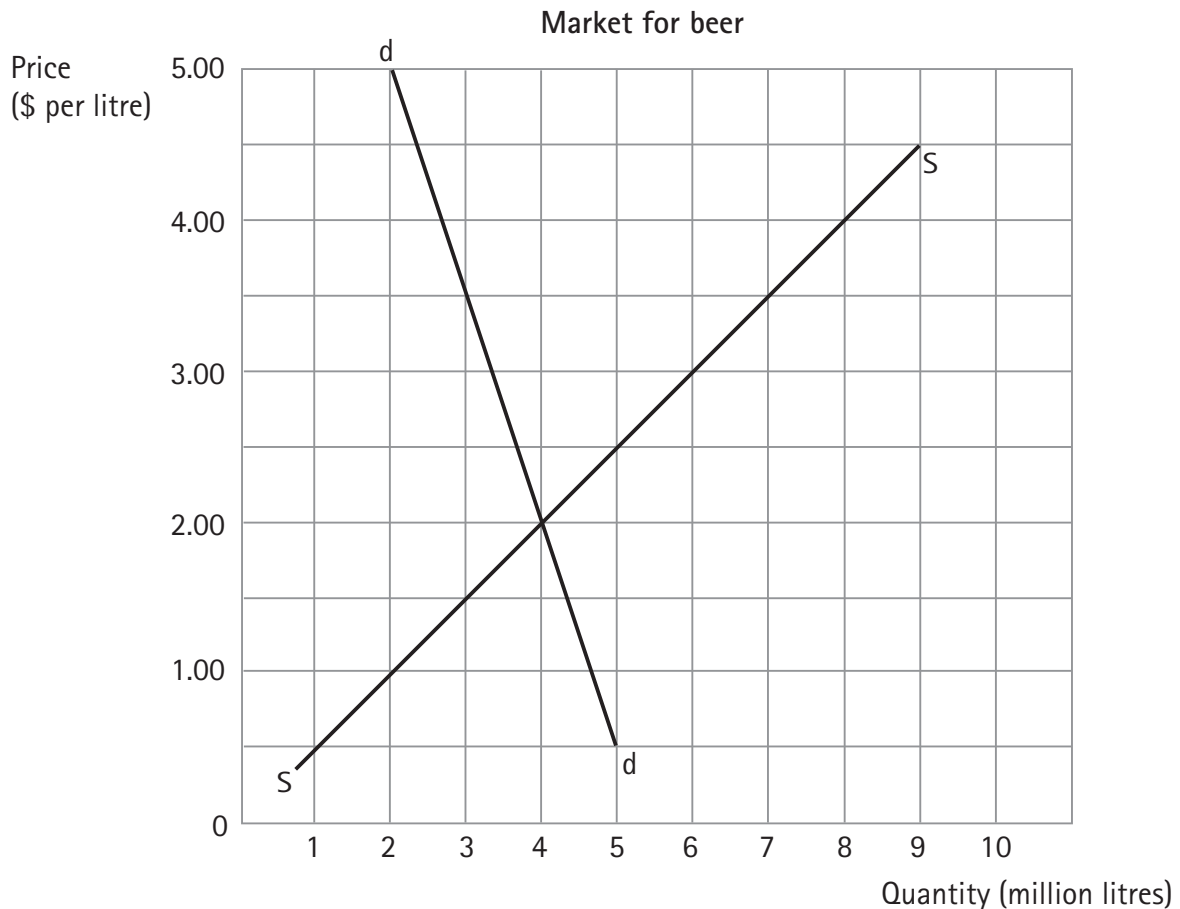
- (d) After the tax has been applied, show and clearly label on Diagram 1 the producer incidence of the tax.
- (e) After the tax has been applied, show and clearly label on Diagram 2 the consumer incidence of the tax.



# eLearneconomics: Sales tax incidence (3)

## Student response

Study the diagram below and answer the questions that follow.



**(a)** How much would the indirect tax have to be per litre for the price to rise to \$3.50 per litre?

**(b) (i)** Show the effects of an indirect tax that results in a price of \$3.50 per litre.

**(ii)** Calculate at the new equilibrium how much producers earn per litre.

**(iii)** Calculate how much the government will raise in tax revenue.

**(c)** Explain why an indirect tax may be considered more beneficial than a minimum price control.

**(d) (i)** Calculate the price elasticity of demand. Show your working.

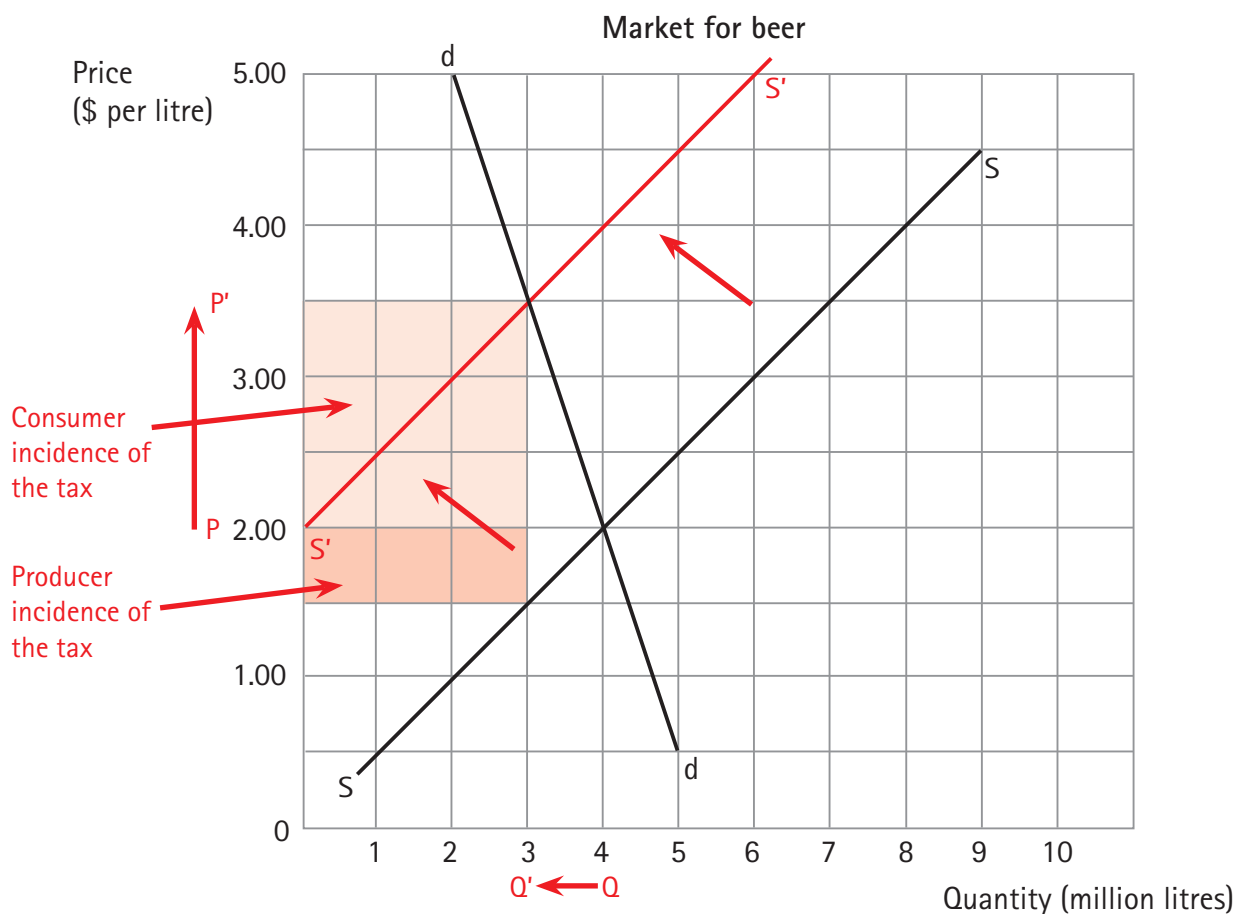
**(ii)** Shade in the consumer incidence and producer incidence of the tax.

# eLearneconomics: Sales tax incidence (3a)



## Solution

Study the diagram below and answer the questions that follow.



(a) How much would the indirect tax have to be per litre for the price to rise to \$3.50 per litre?

\$2.00 per litre.

(b) (i) Show the effects of an indirect tax that results in a price of \$3.50 per litre.

(ii) Calculate at the new equilibrium how much producers earn per litre.

\$1.50 per litre.

(iii) Calculate how much the government will raise in tax revenue.

\$2.00 x 3 million = \$6 million

(c) Explain why an indirect tax may be considered more beneficial than a minimum price control.

Idea of the market still operates at equilibrium – there is no resulting surplus, the market clears.

(d) (i) Calculate the price elasticity of demand. Show your working.

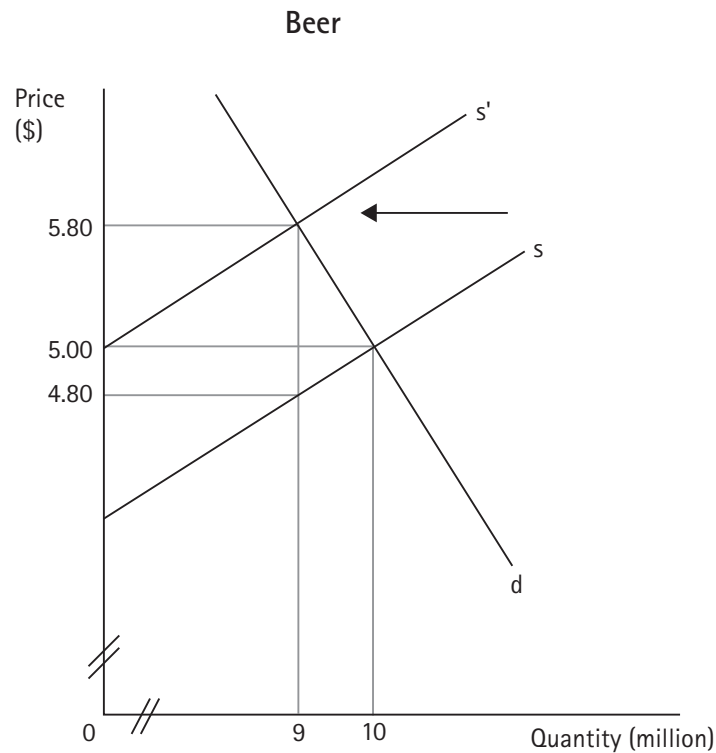
$$E_p = \frac{\left( \frac{-1 \text{ mill}}{3.5 \text{ mill}} \right)}{\left( \frac{1.50}{2.75} \right)} = -0.523 = 0.52 \text{ inelastic}$$



# eLearneconomics: Sales tax incidence (4)

## Student response \_\_\_\_\_

Use the graph to answer the questions in the table.



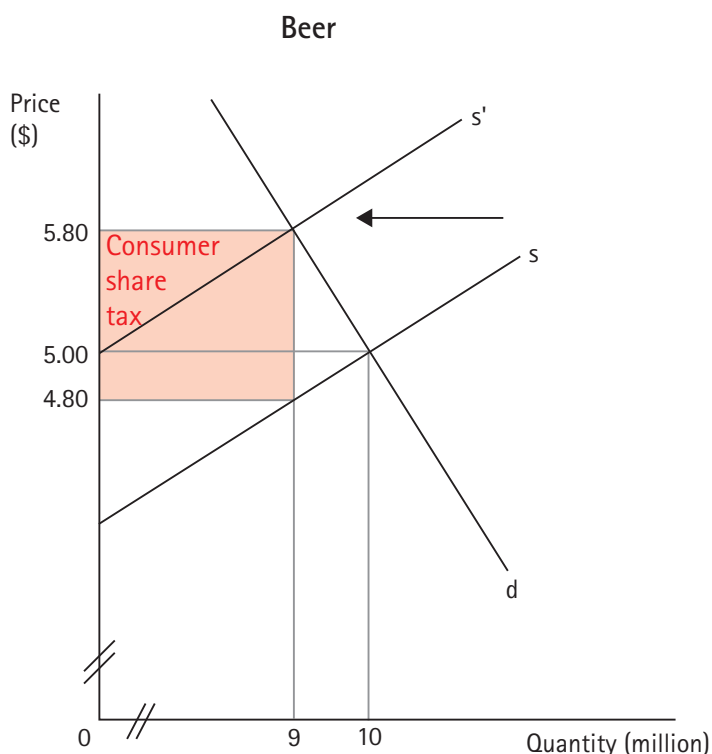
Question	Answer						
a What price did consumers pay before the tax was imposed?							
b What price did consumers pay after the tax was imposed?							
c What was the consumer expenditure before the tax was imposed?							
d What was the consumer expenditure after the tax was imposed?							
e What revenue did the producer receive before the tax was imposed?							
f What revenue did the producer receive after the tax was imposed?							
g What is the change in producer revenue?							
h What incidence of the tax per item falls on the consumer?							
i What incidence of the tax per item falls on the producer?							
j What is the government revenue from the tax? Shade this in.							
k Work out the elasticity of this product (use the table). <div><table><tr><th>P (\$)</th><th>Q (million)</th></tr><tr><td>5.00</td><td>10</td></tr><tr><td>5.80</td><td>9</td></tr></table></div>	P (\$)	Q (million)	5.00	10	5.80	9	
P (\$)	Q (million)						
5.00	10						
5.80	9						
l Label the consumer incidence of the sales tax.	<div>consumer share tax</div> shading on the diagram						
m What do the parallel supply curve lines on the diagram represent?							

# eLearneconomics: Sales tax incidence (4a)



## Solution

Use the graph to answer the questions in the table.



Question	Answer						
a What price did consumers pay before the tax was imposed?	\$5.00						
b What price did consumers pay after the tax was imposed?	\$5.80						
c What was the consumer expenditure before the tax was imposed?	$\$5 \times 10\text{m} = \$50\text{m}$						
d What was the consumer expenditure after the tax was imposed?	$\$5.8 \times 9\text{m} = \$52.2\text{m}$						
e What revenue did the producer receive before the tax was imposed?	$\$5 \times 10\text{m} = \$50\text{m}$						
f What revenue did the producer receive after the tax was imposed?	$\$4.8 \times 9\text{m} = \$43.2\text{m}$						
g What is the change in producer revenue?	-\$6.8m						
h What incidence of the tax per item falls on the consumer?	80¢						
i What incidence of the tax per item falls on the producer?	20¢						
j What is the government revenue from the tax? Shade this in.	$\$1 \times 9\text{m} = \$9\text{m}$						
k Work out the elasticity of this product (use the table). <div> <table border="1"> <thead> <tr> <th>P (\$)</th><th>Q (million)</th></tr> </thead> <tbody> <tr> <td>5.00</td><td>10</td></tr> <tr> <td>5.80</td><td>9</td></tr> </tbody> </table> </div>	P (\$)	Q (million)	5.00	10	5.80	9	$E_p = \frac{\left(\frac{-1}{9.5}\right)}{\left(\frac{.80}{5.40}\right)} = -0.710 = 0.71$
P (\$)	Q (million)						
5.00	10						
5.80	9						
l Label the consumer incidence of the sales tax.	<div>consumer share tax</div> shading on the diagram						
m What do the parallel supply curve lines on the diagram represent?	A per unit sales tax.						