In the next two lessons we will be looking the following areas.

Indirect taxes
Subsidies

1. Draw a demand and supply curve for the market for cigarettes.

a) Illustrate what happens when the government imposes a **tax** on the producer.
   What would be the **impact** on the market ? (Think about the producer's costs)

   _____

   _____

Price

Quantity demanded/supplied

b) Complete the diagram showing what happens in full when a tax is imposed.
c) Write down the **areas** that represent the following.

   + Tax paid by the **producer**.

   _____

   + Tax **paid** by the **consumer**.

   _____

   + Total Tax **received** by the **government**.

_____

➕ **Producer revenue** before and after the tax.

_____

d) Give **<u>examples</u>** of the kind of products upon which the government would place a tax.

⇒

⇒

⇒

e) **Why** do the government **impose indirect taxes** on the production of certain products?

_____

_____

_____

f) There are two types of tax that the government can impose upon a firm. These are :-

➕ _____

➕ _____

g) On the two diagrams below indicate the difference between a specific (flat rate) tax and an Ad-Valorem Tax.

Price

Price

Quantity demanded/supplied

Quantity demanded/supplied
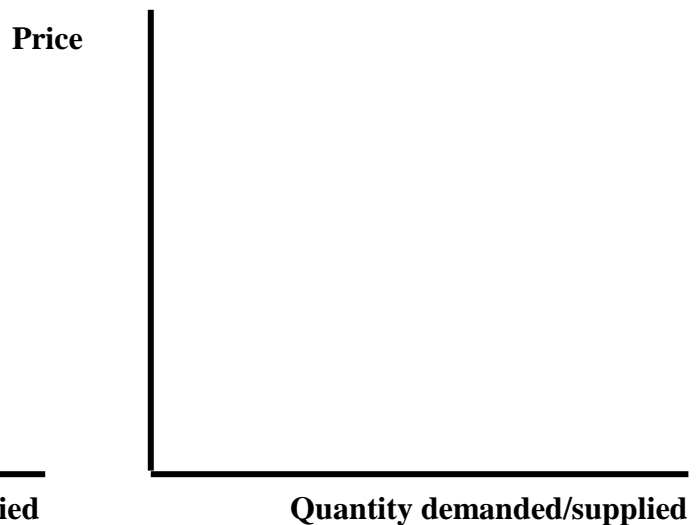
h) Give an example of an **Ad-Valorem tax** that any government imposes upon a product.

_____

_____

i) Give an example of a **specific (flat rate) tax** that a government imposes on a product.

_____

_____

j) The type of product and its price elasticity of demand can have an effect upon how much of an indirect tax is paid by the **consumer** and how much is paid by the **producer**.

- Consider what happens when the government raises tax on petrol. Illustrate the impact of this on the diagram below.

Price

Quantity demanded/supplied
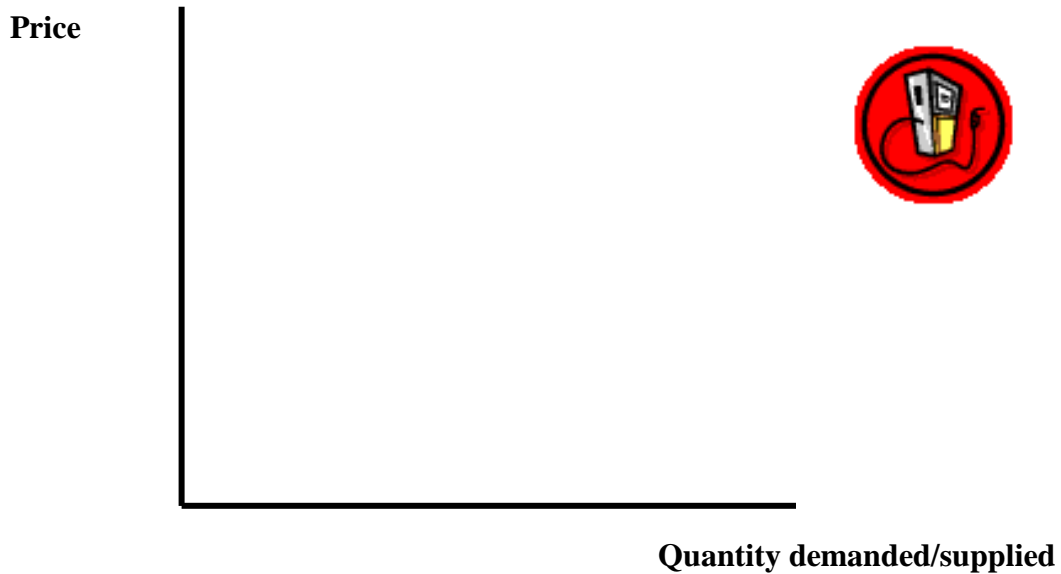
k) Looking at the diagram, who pays the majority of the tax to the government?

_____

l) Why are producers able to pass on most of the tax increase to consumers?

_____

_____

m) Conversely illustrate the impact of an increase in the indirect tax on the market for perfume.

Price

Quantity demanded/supplied

n) **Who** pays the majority of the tax to the government in this example?
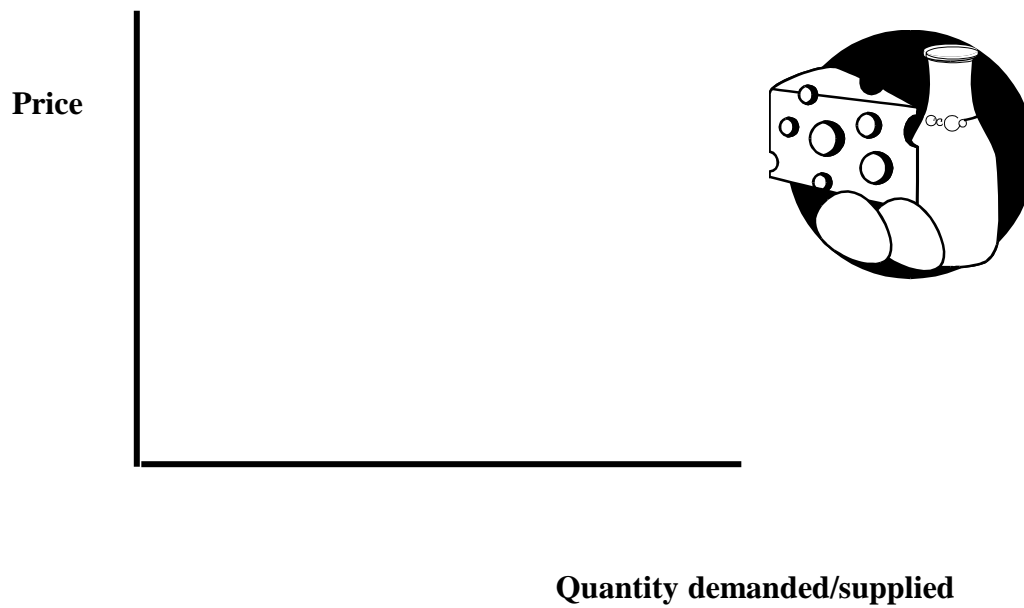
_____

o) **Why** is this the case here?

_____

_____

➕ What is meant by the term **subsidy**?

_____

_____

_____

➕ How do subsidies effect the following stakeholders?

Stakholder	Impact
Producers	
Consumers	
Government	

On the diagram below illustrate the impact that a subsidy would have on the market for wheat.

Price

Quantity demanded/supplied

p) Identify from the diagram above the following.

  Amount of the subsidy.

  _____

  Total revenue received by the producer.

  _____

  The old and the new **price** paid by the consumer.

  _____

q) **Which** products/industries might receive a subsidy from the government ?

⇒

⇒

⇒

⇒

r) Why do the government grant/give subsidies to certain companies?

_____

_____

_____

Calculating the Incidence of a tax and a subsidy

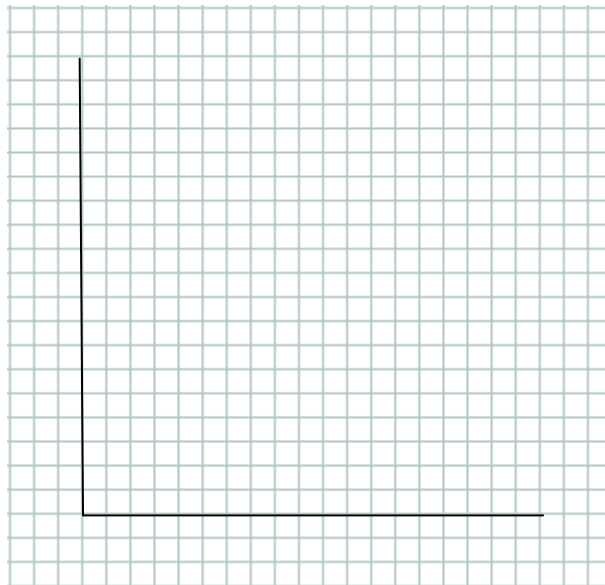- Let's take the demand and supply functions used in the previous example

Qd = 50 - 5P

Qs = -25 +10 P

- Plot the demand and supply diagram on the axis below.

Price	0	2	5	8	10
Qd = 50 – 5P					
Qs = -25 + 10P					

1) – Now we are going to introduce a per unit tax of **$1.5 per unit.** The new equation for the supply curve is given as follows:-

Qs = -40 +10 P

Price		0	2	5	8	10
$Qd = 50 - 5P$						
$Qs = -40 + 10P$						

- Plot the new demand and supply diagram now that the per-unit tax has been imposed.
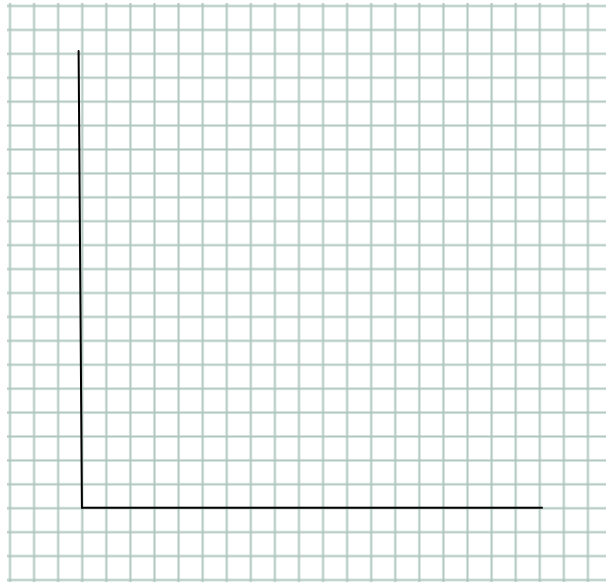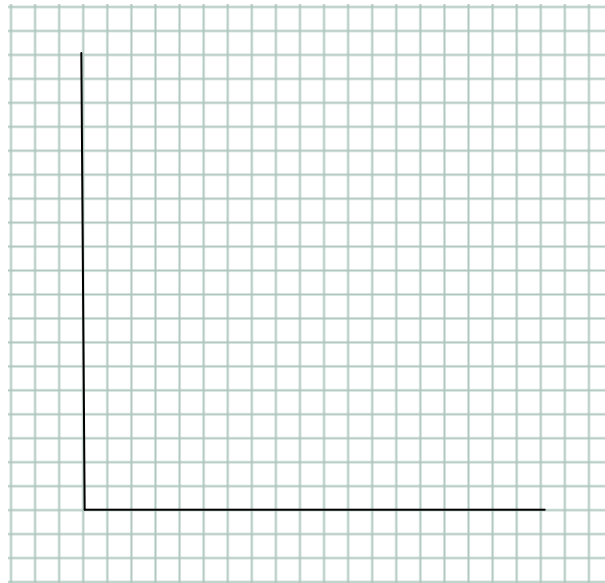
2) – Calculate the following amounts.

• Amount of tax paid by the consumer	
• Amount of tax paid by the producer	
• Total amount of tax received by the government	
• Revenue of the firm before the tax.	
• Revenue of the firm after the tax	
• New selling price	

3) Now we are going to introduce a subsidy of **$1.5 per unit.** The new equation for the supply curve is given as follows:-

Qs = -10 +10 P

Price	0	2	5	8	10
Qd = 50 – 5P					
Qs = -10 + 10P					

- Plot the new demand and supply diagram now that the subsidy has been introduced.

4) – Calculate the following amounts.

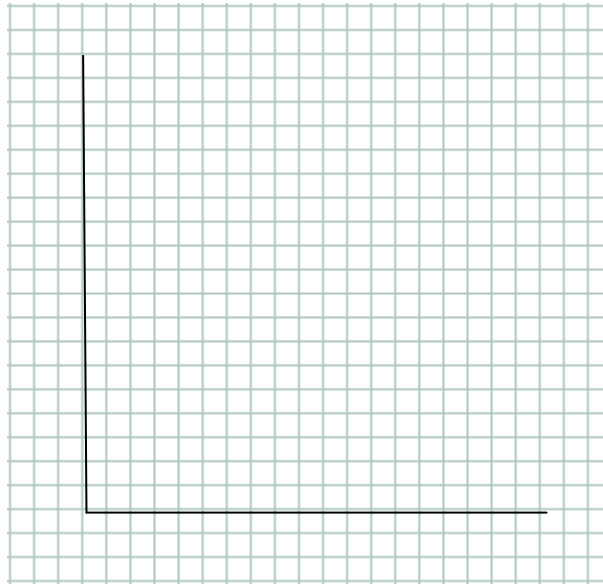|	
• The subsidy paid by the government	
• The total revenue received by the firm	
• The new selling price	

5) – Take the following equations:-

Qd = 60 – 5P

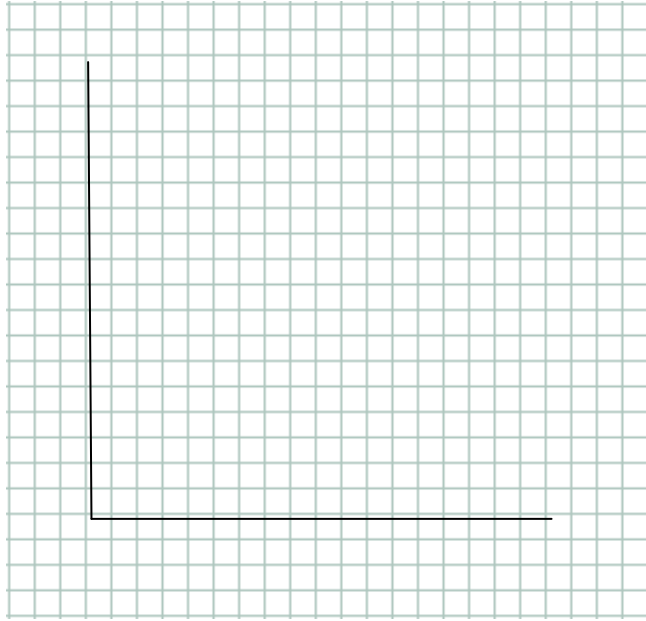**Qs = –30 + 10 P**

a) - Plot the demand and supply curves.

b) - Introduce a per unit tax of $3 per unit.
c) – Plot the new supply curve on the same diagram.

Price	0	2	5	8	10
Qd = 60 – 5P					
Qs = ___ + 10P					

a) - Plot the demand and supply curves.
b) - Introduce a subsidy of $3 per unit.
c) – Plot the new supply curve on the same diagram.

| Price	0	2	5	8	10
Qd = 60 – 5P					
Qs = ___ + 10P					

In this lesson we will be looking at what happens when there is intervention in the market and a price is set that is not the market equilibrium price.

1. We often hear on the radio that concert promoters are concerned that tickets are being sold on the '**black market**'. We can use demand and supply analysis to show why this is happening and what can be done about it.

➕ The promoters of the concert decide that tickets prices will be **50 CHF**.

➕ On the diagram below draw a **demand and supply diagram** to illustrate this situation.

Price

Market for Concert Tickets

Quantity demanded/supplied
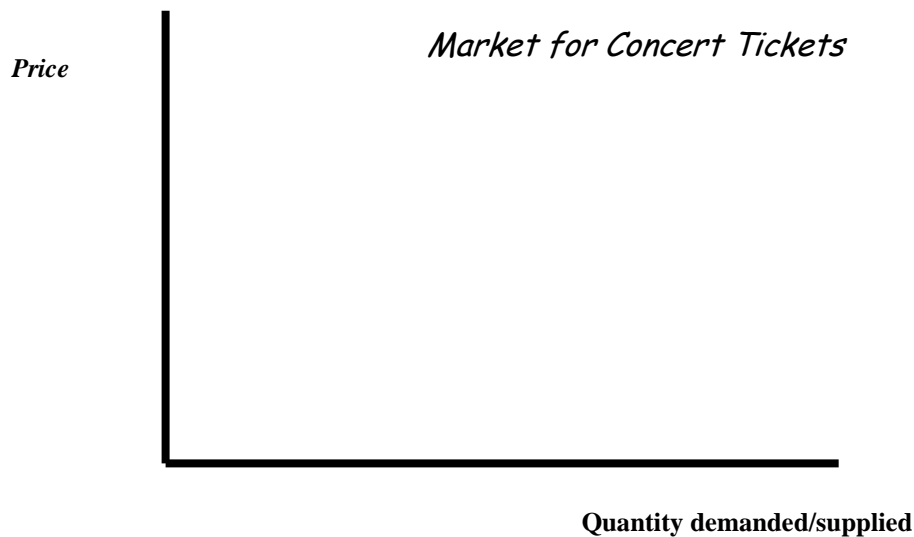
2. What situation has occured in the above market?

_____

3. Why is **50 CHF not** a suitable price to charge in this case?

_____

_____

4. What is the other consequence of charging this price for the tickets?

_____

_____

5. On the diagram below illustrate how the market equilibrium could be **restored**.

Price

Market for Concert

Quantity demanded/supplied

_____

_____
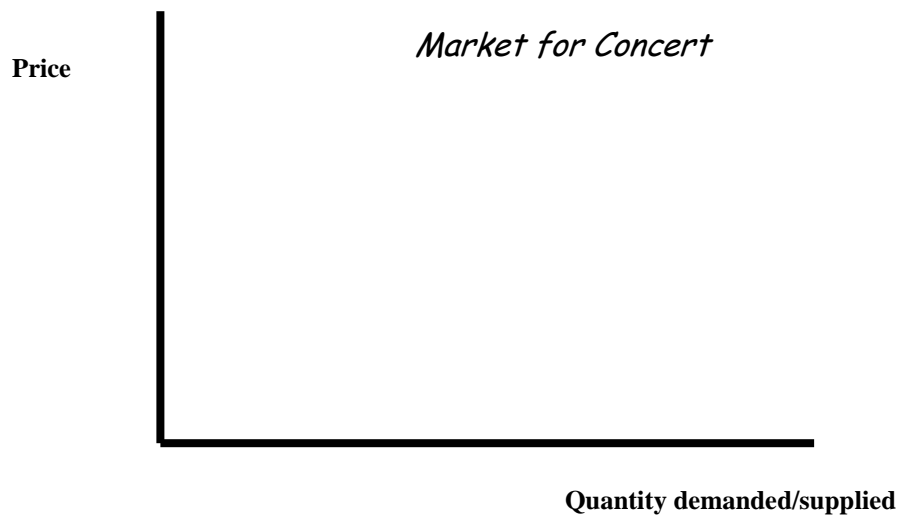
6. We are now going to look at a similar example but this time it relates to the supply of student accommodation in Milan.

Price

Market for Student

Quantity demanded/supplied
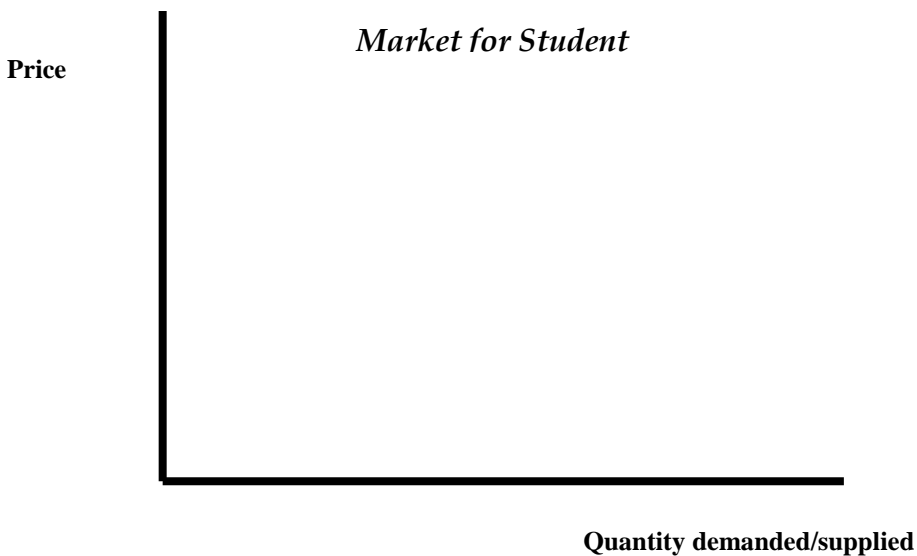
➕ Milan is an increasingly **popular destination** for students all across Europe. The local government of Milan are concerned that increasing demand for accommodation is pushing up the prices of flats for students.

➕ The council has therefore decided that the <u>maximum rent</u> that can be charged by a landlord is **70 Euros a week**. On the diagram illustrate what would happen in the market if this were to be <u>imposed</u>.

7. What would happen to the **quantity of students accommodation supplied** by landlords?

_____

8. What would be the resulting situation in the market?

_____

9. How should this situation be solved by the **local government**?

➕ _____

➕ _____

*Market for Student Accommodation*

Price

Quantity demanded/supplied
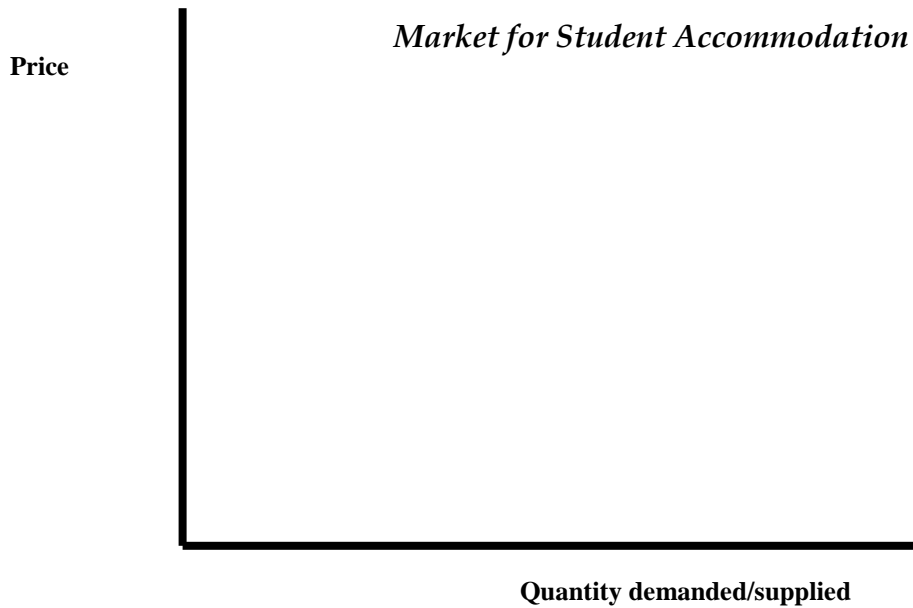
10. The European Union used to operate a system of **minimum prices** for farmers in **Europe** as part of the Common Agricultural Policy.

    ➕ For an agricultural product such as milk farmers were guaranteed a set price regardless of the equilibrium price in the market.

   ➕ Illustrate this on the diagram below

Price

Market for Milk

Quantity demanded/supplied
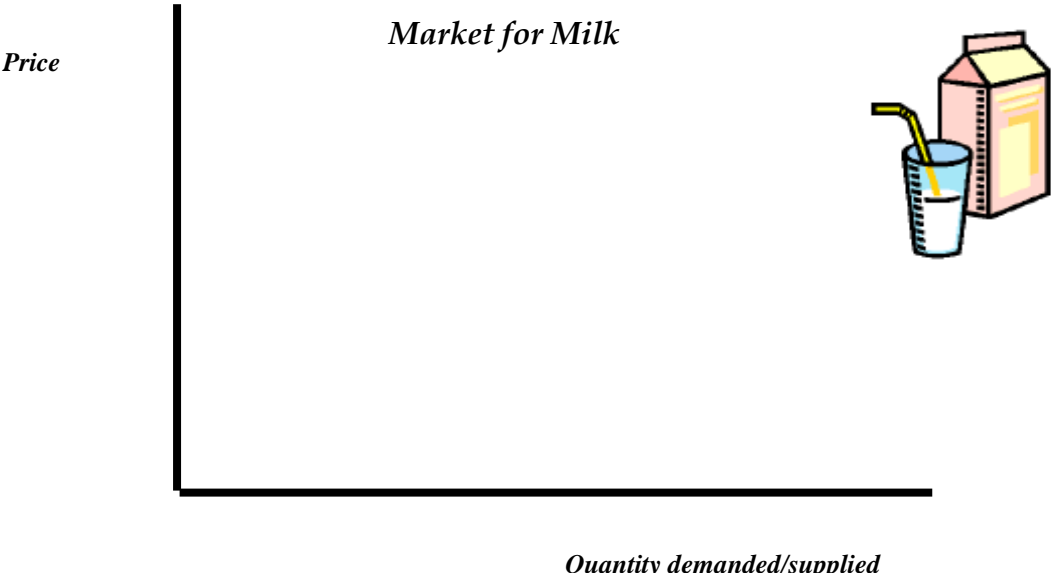
11. Because of this intervention in the market what is the result?

_____

_____

12. Why do you think the European Union has introduced this scheme? Summarise the advantages and disadvantages in the table below.
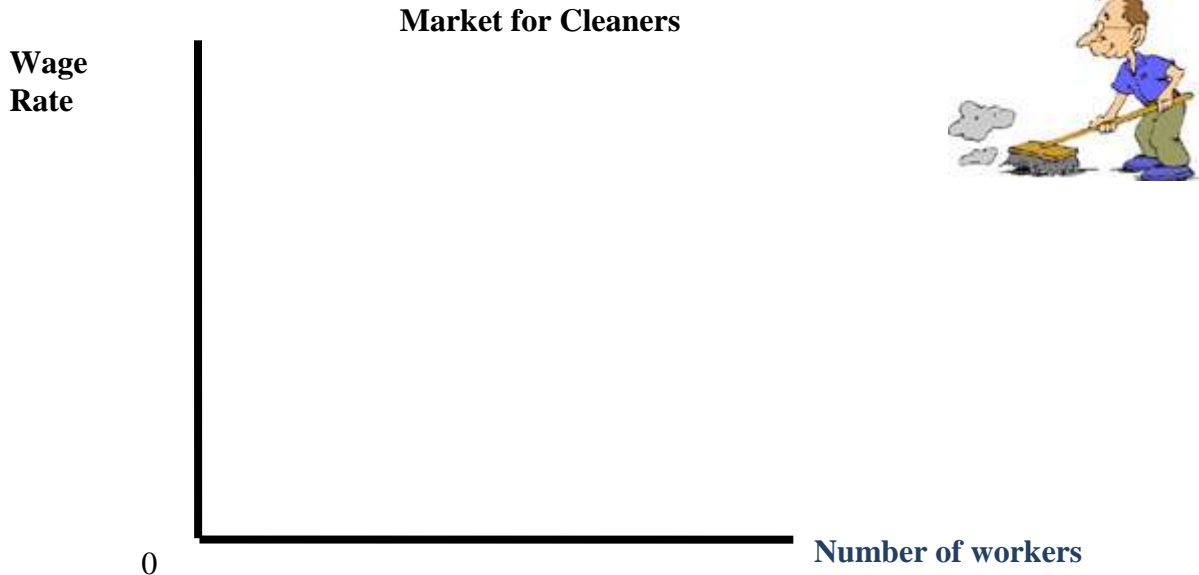
Advantages	Disadvantages
❑	❑
❑	❑
❑	❑
❑	❑

13. How might the European Union rectify this example of **market failure**?

_____

_____

_____

Market for Milk

Price

Quantity demanded/supplied
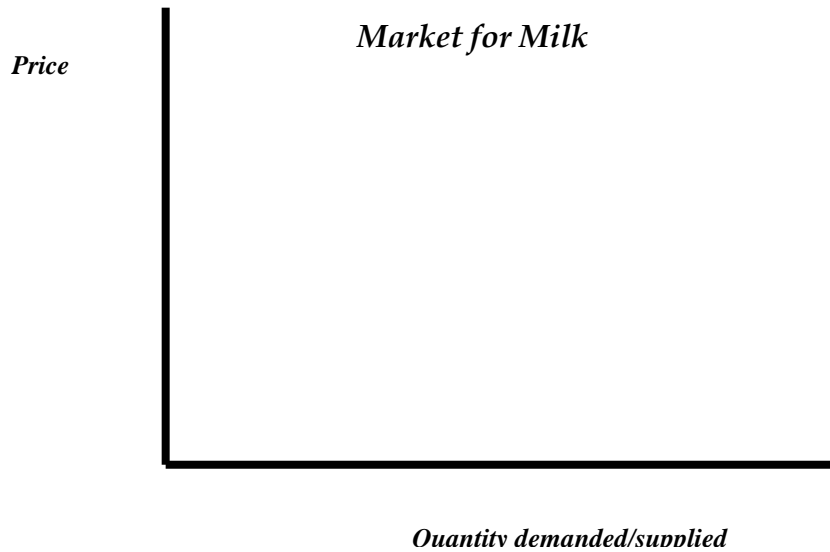
+ A minimum wage gives **protection to those workers** whose weak position in the labour market makes them vulnerable to being paid low wages.

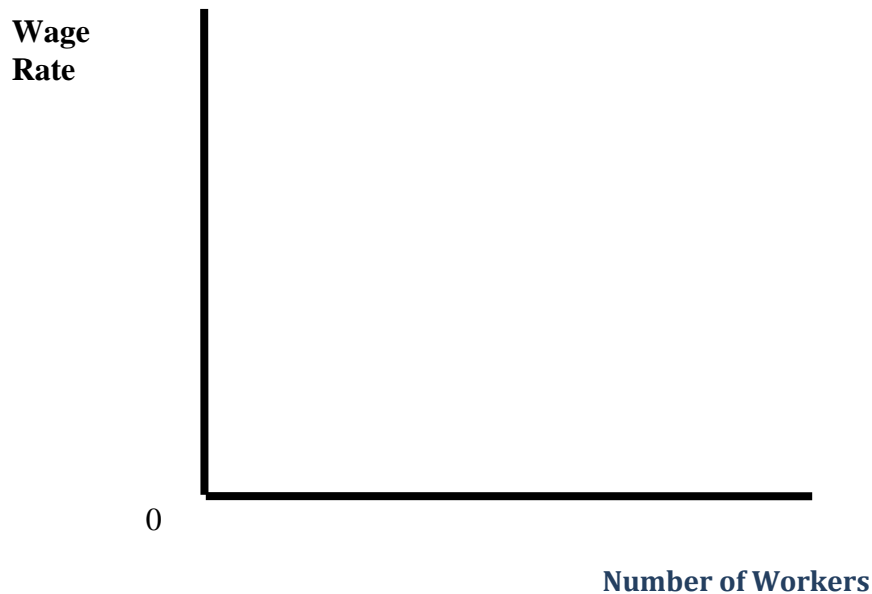**Market for Cleaners**

Wage Rate

0

Number of workers

↓ Illustrate the impact of the minimum wage on the above diagram.

1. What is the **impact** on the labour market of the **Minimum Wage?** Complete the table below.

Group	Impact
Workers	
Employers	
Government	

2. What would happen if the minimum wage was set below the market wage?

Wage Rate

0

Number of Workers

3. How might the minimum wage lead to an increase in employment in a competitive labour market?

Wage Rate

0

Number of Workers
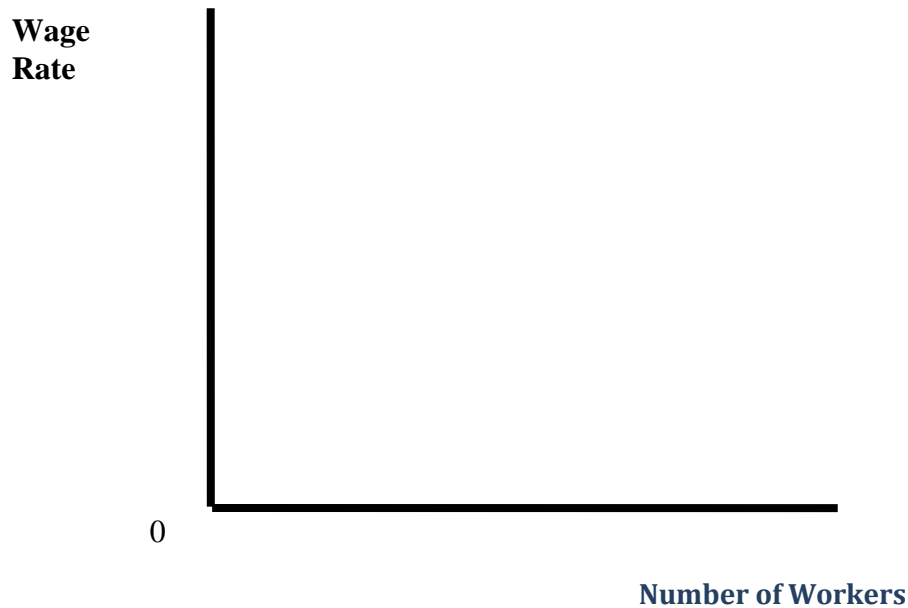
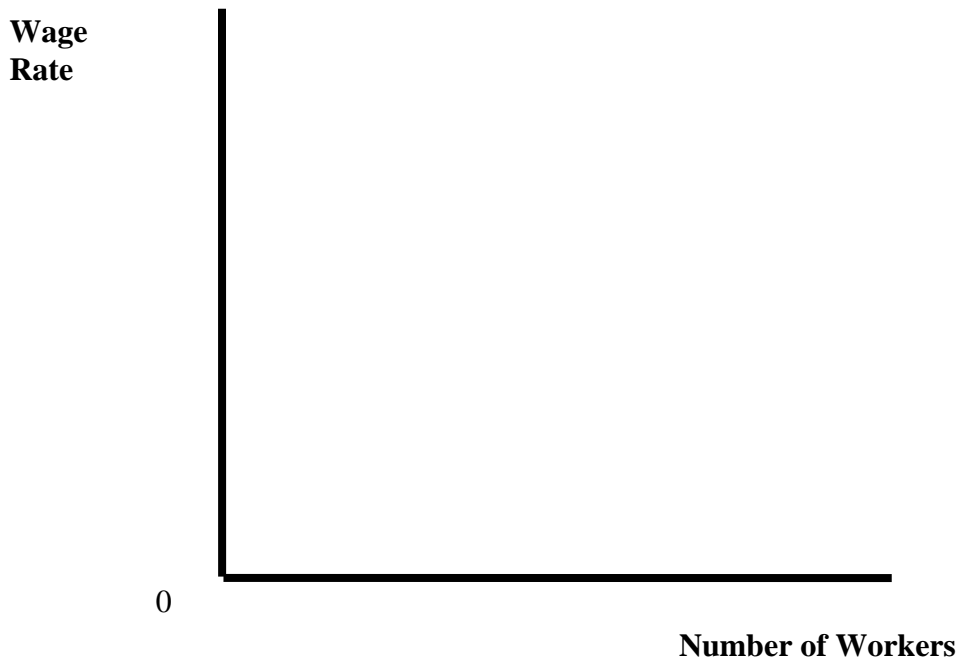4. **Why** might this be the case?

_____

_____

_____

+ Examine the reasons for the above

+ An increase in wages could lead to an **increase in productivity** because of :

5. The **efficiency wage effect**.

_____

_____

_____

6. Use the concept of elasticity to explain and illustrate how the impact of a minimum wage may vary depending upon the labour market.
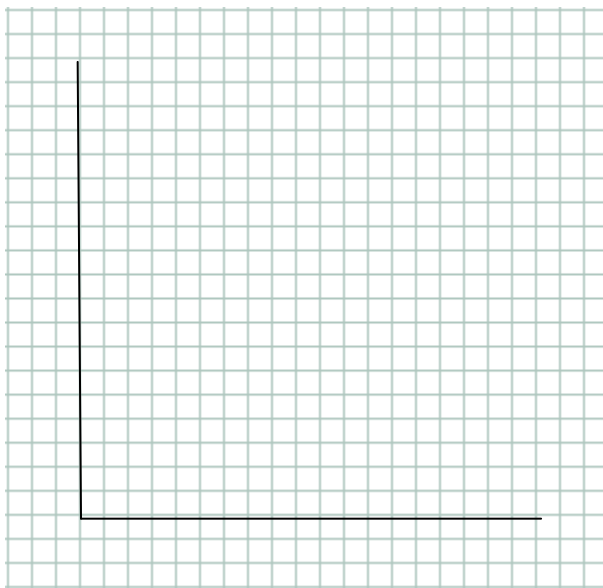
Wage Rate

0

Number of Workers

_____

_____

_____

- Let's take the demand and supply functions used in the previous example

Qd = 50 - 5P

Qs = -25 +10 P

- Plot the demand and supply diagram for the market for bread on the axis below.

| Price	0	2	5	8	10
Qd = 50 – 5P					
Qs = -25 + 10P					
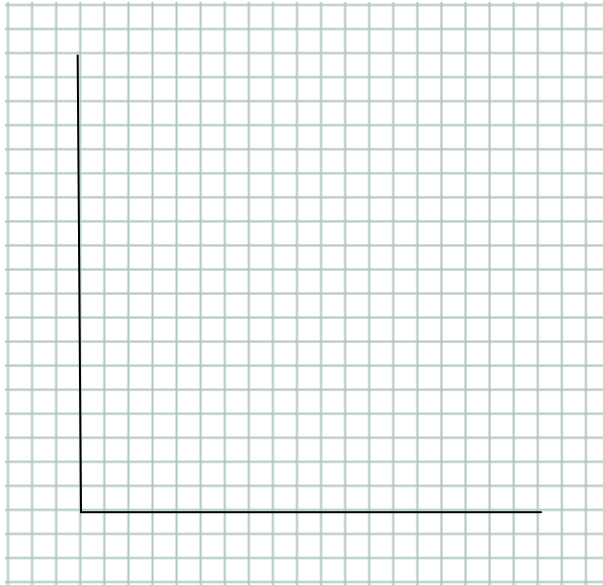
6) – Now the government are going to introduce a price ceiling (maximum prices) of **$4.** Please plot this on the diagram below.

7) - Calculate the following

- The level of excess demand. _____

- The change in consumer surplus. _____

- The change in producer revenue _____

8) – Now let's imagine that a price floor (minimum price) of **$6** is introduced by the government to try and protect farmers from fluctuations in the market price. Please plot this on the diagram below.
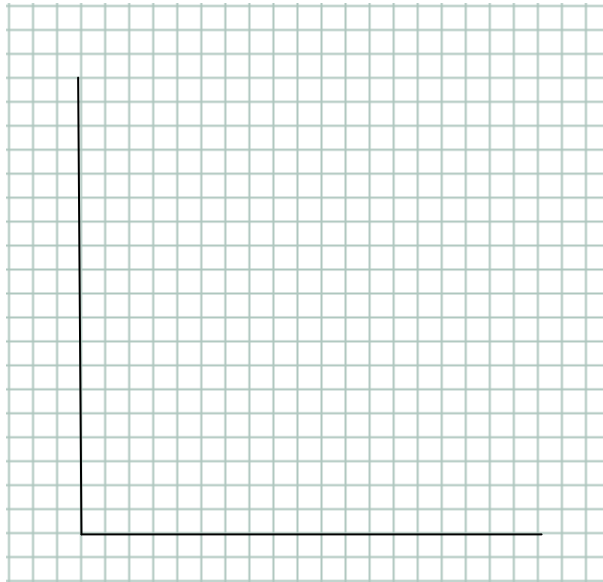
9) – Please calculate the following:-

- The excess level of supply. _____
- The amount of money that would be needed to purchase the surplus. _____