ECON 1010
Introductory
Microeconomics

Pass
Workbook

Semester 2, 2007

Student Version

Peer Assisted Study Sessions

University of Queensland School of Economics
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Welcome to PASS!

PASS is designed to be an informal and friendly way of revising ECON1010. PASS is not designed to replace lectures and tutorials – it is designed to be an enjoyable and helpful way to study material that you have already covered in those lectures and tutorials.

You can find suggested answers to the questions in this workbook by attending PASS. The answers will be placed on the pass website at the conclusion of the semester.

For more details about PASS, including how to apply to be a leader in 2008, please visit the website. There is a link to the PASS website through the Course webpage.

Note:
All questions contained within this book are either sourced or adapted from
- Previous Exam Papers - Published by the University of Queensland
- Resources provided with 'Principles of Micro Economics' – published by McGraw-Hill
- Current and past PASS leaders

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Important Dates

23 JULY (WEEK 1): LECTURES BEGIN

30 JULY (WEEK 2): TUTORIALS BEGIN

6 AUGUST (WEEK 3): PASS SESSIONS BEGIN

15 AUGUST (WEEK 4): EXHIBITION DAY HOLIDAY

20 AUGUST (WEEK 5): FIRST TUTORIAL QUIZ
(TOPIC 1)

3 SEPTEMBER (WEEK 7): SECOND TUTORIAL QUIZ
(TOPICS 2 & 3)

24 SEPTEMBER: MID-SEMESTER BREAK
(no PASS sessions)

1 OCTOBER: CLASSES RESUME

8 OCTOBER (WEEK 11): THIRD TUTORIAL QUIZ
(TOPICS 4 & 5)

30 OCTOBER: SWOT VAC BEGINS
PASS Timetable

Please note: PASS session times may be subject to change depending on student demand.

<table>
<thead>
<tr>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
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<td>8 am – 9 am</td>
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<td></td>
<td></td>
<td>LECTURE 22-201</td>
</tr>
<tr>
<td>9 am – 10 am</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>10 am – 11 am</td>
<td></td>
<td>ECON1010 PASS 83-C416</td>
<td>ECON1010 PASS 68-320</td>
<td>ECON1010 PASS 32-213</td>
</tr>
<tr>
<td>11 am – 12 pm</td>
<td>ECON1010 PASS 39A-208</td>
<td>ECON1010 PASS 32-211</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 pm – 1 pm</td>
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<tr>
<td>1 pm – 2 pm</td>
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<tr>
<td>2 pm – 3 pm</td>
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<tr>
<td>3 pm – 4 pm</td>
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</tr>
</tbody>
</table>
 Thinking like an Economist

Topic One

Key Concepts
Definition of economics (macroeconomics, microeconomics)
Scarcity Principle          Cost-Benefit Principle
Opportunity Cost            Sunk Cost
The average/marginal distinction The absolute/proportional distinction.

Some Questions To Get You Thinking

1. Why do we have Economics?
What is it about human existence that means we need economics?

Do only economists use economics on a day-to-day basis?

Do you use economics daily?

2. The decision to come to university
How much is your university degree costing you?

What would you be doing if you were not studying at university?

What is your Opportunity Cost of studying at university?

Why, then, do so many people come to university?

What does this tell you about whether or not you should do an Honours year?
3. The costs of riding buses

If you were stuck at uni without a car, and you needed to get to friend’s place, would you rather get a bus or a taxi? Why?

If you knew the bus trip would take you an hour longer than the taxi, but was $20 cheaper, would that change your decision? Why?

How much longer would the bus have to take you to in order to justify spending the extra $20? Discuss this with your group – it is quite likely you will have different answers.

What does this tell you about opportunity cost?

4. How long should you clean your room for?

Should you clean your room until every speck of dust is gone?

How much is getting rid of that last bit of dust worth? What would it cost you to clean?

Is the first bit of your room easier or harder to clean than the very last bit?

So when should you stop cleaning your room?
Multi-choice Questions:

1. Which of the following would make the need for economics disappear
   a) wants are limited
   b) needs are limited
   c) resources are unlimited
   d) resources are limited

2. When we say that “There is no such thing as a free lunch” this means that
   a) we must pay money for everything we get.
   b) there are trade-offs whenever a decision is made
   c) every action a person takes has a opportunity cost associated with it.
   d) to get more of one thing means you can get more of something else.
   e) b and c.

3. Which of the following decisions would not be part of microeconomics
   a) What university major to choose
   b) How to make the largest profit
   c) Whether to study or watch TV tonight
   d) Should the federal budget be balanced

4. The Cost Benefit principle tells people to take an action if
   a) benefits exceed costs
   b) cost exceed benefits
   c) benefits are positive
   d) marginal benefits exceed marginal cost

5. As economists, should we look at the proportional costs and benefits, or absolute values?
   a) Proportions, because it is worth more effort to get a high percentage of benefit.
   b) Proportions, because we analyse economic decisions differently depending on their size.
   c) Absolute, because we are concerned with the actual costs and benefits, not proportions.
   d) Either can be appropriate, depending on the circumstances.

6. When deciding whether to pursue an activity further, which of the following costs is relevant?
   a) sunk costs
   b) marginal costs
   c) average costs
   d) fixed cost
   e) total costs
The next two questions come from the following table

<table>
<thead>
<tr>
<th>Unit</th>
<th>Total Cost</th>
<th>Total Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>15</td>
<td>24</td>
</tr>
</tbody>
</table>

7. The average benefit of the buying 4 units is
   a) 20
   b) 10
   c) 4
   d) 5

8. The marginal cost of the 3rd unit
   a) 1
   b) 2
   c) 3
   d) 6

9. What is the opportunity cost of living in a house that you already own?
   a) zero, because you already own it
   b) depends on your home loan arrangements
   c) depends on how much you like living there.
   d) The rent you could receive if you rented the house out to someone else.

10. Tracy has a job that pays her a salary of $50,000 a year. She has been offered another job that pays $60,000 but prefers the one she is in. She is also considering leaving her job to set up her own business. What would be the opportunity cost to her of working in her own business during the first year?
   a) The benefit forgone by leaving her current job.
   b) The benefit forgone by not taking the job that pays $60,000 a year.
   c) The $10,000 difference in annual salary between the two jobs.
   d) The benefit forgone by leaving her current job plus the benefit forgone by not taking the job at $60,000.

**One more question:**
Why might you turn down an invitation for lunch with a classmate, even if the classmate offers to pay?
Notes
Demand and Supply I

PASS Topic 2A

Key Concepts

<table>
<thead>
<tr>
<th>Economic “systems”</th>
<th>Resource allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand</td>
<td>Supply</td>
</tr>
<tr>
<td>what it is</td>
<td>what it is</td>
</tr>
<tr>
<td>where it comes from</td>
<td>where it comes from</td>
</tr>
<tr>
<td>why it slopes downward</td>
<td>why it slopes upward</td>
</tr>
</tbody>
</table>

The difference between a change in supply/demanded and a change in the quantity demand/supplied.

Multi-choice Questions

1. Which of the following best describes an economist’s understanding of ‘demand’?
   
a) A consumer desire
   b) A relationship
   c) The quantity consumers buy
   d) A rude request

3. Refer to the graphs. A decrease in the quantity demanded is shown by arrow
   
a) A  
b) B  
c) C  
d) D

4. Refer to the graphs. An increase in the demand is shown by arrow
   
a) A  
b) B  
c) C  
d) D
5. In general, when the demand curve shifts to the right and supply remains constant then
   a) quantity demanded will rise
   b) the equilibrium price will fall
   c) quantity supplied will fall
   d) the equilibrium quantity will rise

6. In general the higher the price, the higher the quantity supplied. This is consistent with
   a) rising marginal costs
   b) the low hanging fruit getting picked first
   c) diminishing returns of the variable input
   d) all of the above
   e) none of the above

   (2004 First Semester Final)

7. Of the following, which is not one of the main problems for all economics systems?
   a) What goods should be produced
   b) How should the goods be produced
   c) For Whom should the goods be produced
   d) How much should everything cost

8. In a capitalist economy if the price of a good is below the equilibrium price, then
   a) Government needs to set a higher price
   b) Suppliers, dissatisfied will growing inventories will raise the price
   c) Buyers, wanting to ensure they acquire the good will bid the price up
   d) The price will instantly rise to the equilibrium price, because that’s the price it should be

9. A socially optimal quantity maximises
   a) economic surplus
   b) sellers surplus
   c) buyers surplus
   d) equilibrium quantity demanded and supplied

10. Assume Joe is willing to produce another hamburger that costs $1 to make. Mary is hungry and is willing to pay $3 for a hamburger. Mary and Joe should:
    a) Marry
    b) Trade
    c) Never trade because each will look for better deal
    d) Never trade because the deal makes no-one better off.
Short Answer Questions

For Question 1, refer to the following table regarding the market for apartments in Brisbane:

<table>
<thead>
<tr>
<th>Demand</th>
<th>Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Price ($)</td>
<td>Quantity</td>
</tr>
<tr>
<td>340 000</td>
<td>100</td>
</tr>
<tr>
<td>330 000</td>
<td>200</td>
</tr>
<tr>
<td>320 000</td>
<td>300</td>
</tr>
<tr>
<td>310 000</td>
<td>400</td>
</tr>
<tr>
<td>300 000</td>
<td>500</td>
</tr>
<tr>
<td>290 000</td>
<td>600</td>
</tr>
<tr>
<td>280 000</td>
<td>700</td>
</tr>
<tr>
<td>270 000</td>
<td>800</td>
</tr>
<tr>
<td>260 000</td>
<td>900</td>
</tr>
</tbody>
</table>

1. Using the above information:

(a) Find the market equilibrium quantity of apartments and the corresponding price (hint: a diagram might make it particularly clear).

(b) Suppose quantity demanded increases by 200 at every price. What is the new equilibrium quantity and corresponding price?
Demand and Supply II

PASS Topic 2B

<table>
<thead>
<tr>
<th>Key Concepts</th>
</tr>
</thead>
<tbody>
<tr>
<td>What causes a shift of the demand</td>
</tr>
<tr>
<td>What causes a shift of the supply curve</td>
</tr>
<tr>
<td>Normal goods</td>
</tr>
<tr>
<td>Substitutes</td>
</tr>
<tr>
<td>Price floor</td>
</tr>
</tbody>
</table>

Group Discussion:

Listed are some of the main changes that may shift either the demand curve or the supply curve.

<table>
<thead>
<tr>
<th>GROUP 1</th>
<th>GROUP 2</th>
<th>GROUP 3</th>
<th>GROUP 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A change in production technology</td>
<td>A change in the price of goods used in production</td>
<td>A change in the number of consumers in the population</td>
<td>A change in consumers’ income</td>
</tr>
<tr>
<td>A change in consumers’ preferences</td>
<td>A change in the price of a substitute or complement</td>
<td>A change in firms’ expectations of the future</td>
<td>A change in consumers’ information</td>
</tr>
<tr>
<td>A change in consumers’ expectations of the future</td>
<td>A change in the number of firms in the market</td>
<td>A change in government taxes or subsidies</td>
<td>A change in government regulation</td>
</tr>
</tbody>
</table>

For each change:

1. Think of a real world example first.

2. For that real world example, which curve shifts?

3. Why?

4. Would a different example result in different answers to the last two questions?
Multi Choice Questions

1. More television sets are being sold today than one year ago, and the selling price has increased. This could have been caused by

a) a decrease in supply.
b) an increase in demand.
c) a decrease in demand.
d) an increase in supply.

2. What happens in the market for cheese when the price of milk (an input) increases?

a) Equilibrium price increases, equilibrium quantity decreases.
b) Equilibrium price increases, equilibrium quantity increases.
c) Equilibrium price decreases, equilibrium quantity decreases.
d) Equilibrium price decreases, equilibrium quantity increases.
e) It depends on the size of the shifts.

3. Consider fruit juice and soft drink. If the price of soft drink increases,

a) the price of fruit juice will decrease but the price of soft drink will increase.
b) the price of fruit juice will increase but the price of soft drink will decrease.
c) the price of fruit juice will decrease, while the price of soft drink will stay unchanged.
d) the price of fruit juice and the price of soft drink will both decrease.
e) the price of fruit juice and the price of soft drink will both increase.

4. Suppose the government attempts to provide assistance to dairy farmer by establishing minimum prices that can be charged for milk. One would expect that

a) the market for haircuts would still achieve equilibrium.
b) there would be an excess demand for milk
c) the market price for milk would fall.
d) there would be an excess supply of milk

5. An increase in income will

a) increase the demand for turnips if turnips are inferior goods.
b) increase the demand for turnips if turnips are normal goods.
c) increase the supply of turnips.
d) decrease the demand for turnips if turnips have a very low price.

6. Which of the following would not cause a consumer’s demand for bus travel to change?

a) The consumer’s income.
b) The price of a bus ticket.
c) An advertising program pointing out the benefits of travelling by buses.
d) The presence of security cameras on buses.
e) More comfortable seating at bus stops. 

(2005 First Semester Final)
7. If both supply and demand increase simultaneously, the new equilibrium price is ____________ and the new equilibrium quantity is _________________.

a) lower; lower.
b) lower; indeterminate
c) indeterminate; higher
d) indeterminate; lower
e) higher; indeterminate.  

(2005 First Semester Final)

Short Answer Questions
1. Consider the market for rental accommodation (for example, apartments).

a) Draw a demand and supply diagram to represent this. What is ‘price’ in this context?

b) Explain how equilibrium will occur. Use a diagram if necessary.

c) Suppose that the local council chooses to introduce a rent control. What happens to the quantity of apartments supplied and demanded?

d) There is a common economic argument against such practice. It has been said that this provides incentives to landlords. Discuss what sort of incentives these are and how it may interfere with the market. i.e what might landlords do in response?

2. It is very frequently difficult to find parks on campus during the day. What does this suggest about how parking at university is priced?

Why do you think parking is priced this way? Should we have a car park market at uni?
Elasticity

PASS Topic 3

This is the only really mathematical week of the course, and it only requires multiplication, division, adding and subtracting. If you can get through this week the rest of the course is relatively maths-free!

Key Concepts

<table>
<thead>
<tr>
<th>Elasticity</th>
<th>Price elasticity of demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Elastic”/“Inelastic”/“Unit elastic”</td>
<td>The mid-point formula</td>
</tr>
<tr>
<td>How the elasticity of a demand curve is different from the slope of the curve</td>
<td></td>
</tr>
</tbody>
</table>

Group Discussion

What is elasticity?

What are the factors that affect price elasticity of demand? Do they make demand more or less elastic?

How can we calculate elasticity?
Multi-choice Questions:

1. Suppose the price of a good is increased from $2.00 to $4.00 and as a result the quantity demanded decreased from 4,000 to 3,000. Using the midpoint formula, the absolute value of the price elasticity of demand for this good in this price range equals

   a) 0.83  
   b) 0.43  
   c) 1.2  
   d) 2

2. The price of a good changes from $10 to $30 and as a result the quantity demanded decreases from 1000 to 500 units. Using the midpoint formula, the price elasticity of demand for this good equals

   a) 0.67  
   b) 0.6  
   c) −0.67  
   d) 1.52

3. Which of the following is a characteristic of a good that has an inelastic demand?

   a) There are few substitutes for the good.  
   b) The relevant time period for making a decision is relatively long  
   c) The good accounts for a large portion of buyer's total income  
   d) The good is a luxury.

4. If the demand for good X is perfectly inelastic, a 3 percent increase in the price of good X will

   a) decrease the quantity demanded of X by 3 percent  
   b) decrease the quantity demanded of X by more than 3 percent  
   c) decrease the quantity demanded of X by less than 3 percent  
   d) the quantity demanded of X will not change since the demand for X is perfectly inelastic

5. You are manager of a hotel and management tells you that they want to increase room occupancy by 20 percent. Based on past experience you estimate that the price elasticity of demand for your hotel is 0.8. To obtain the necessary increase in occupancy, you should decrease the price of rooms by

   a) 25%  
   b) 20%  
   c) 16%  
   d) 8%
Leaders’ note – the gap between these two pages is a very useful place to stop and ask students if they understand the relationship between elasticity and revenue before jumping into actual questions.

6. The government has decided that the market determined price for bananas is too low. A price floor is introduced. Farmers complain that the price floor has reduced revenue.

   a) This is impossible – government intervention always helps industry.
   b) This is possible if the price elasticity of demand is inelastic.
   c) This is possible if the price elasticity of demand is unitary elastic.
   d) This is possible if the price elasticity of demand is elastic.
   e) None of the above.

7. Price elasticity of demand determines the relationship between price changes and total revenue. When demand is elastic,

   a) price and total revenue move in opposite directions.
   b) price and total revenue move in the same direction.
   c) total revenue increases when price goes up or down.
   d) total revenue decreases when price goes up or down.

8. Firms that produce goods with few substitutes will find that

   a) lowering price increases total revenue
   b) lowering price decreases total revenue.
   c) raising price decreases total revenue
   d) lowering price leaves total revenue unchanged

9. When a good has an inelastic demand and price increases then the quantity demanded

   a) falls by a smaller percent and total revenue to the firm increases
   b) falls by a smaller percent and total revenue to the firm decreases
   c) rises by a smaller percent and total revenue to the firm decreases
   d) falls by the same percent and total revenue to the firm remains the same.

10. The relationship that exists between the price elasticity of demand and the slope of a straight-line demand curve is that

    a) slope and elasticity are directly related - the steeper the slope, the more inelastic the demand curve
    b) slope and elasticity are inversely related - the steeper the slope, the more elastic the demand curve
    c) price elasticity decreases in value as one moves down the demand curve, becoming more inelastic
    d) price elasticity increases in value as one moves down the demand curve, becoming more elastic
11. The above figure shows a demand curve and the points A, B and C on a demand curve.

a) A is more elastic than B.
b) A is less elastic than B.
c) C is more inelastic than B.
d) Both (a) and (b)
e) Both (a) and (c)  

Discussion Question

1. Why wouldn’t a drug company increase revenue by putting prescription drug “on sale”?

2. From an economics perspective, what is the point of advertising? 

   Is the concept of elasticity at all related to why businesses advertise their products? (hint: a diagram might help answer this question)
Perfectly Competitive Supply

PASS Topic 4

<table>
<thead>
<tr>
<th>Key Concepts</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Law of increasing opportunity cost</td>
<td>Law of diminishing returns</td>
</tr>
<tr>
<td>Marginal cost</td>
<td></td>
</tr>
<tr>
<td>Fixed costs</td>
<td>Average fixed cost</td>
</tr>
<tr>
<td>Variable costs</td>
<td>Average variable cost</td>
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<tr>
<td>Total costs</td>
<td>Average total cost</td>
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<tr>
<td>Short run</td>
<td>Long run</td>
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<tr>
<td>Profit maximization</td>
<td>Profit</td>
</tr>
<tr>
<td>Shut down rule</td>
<td></td>
</tr>
</tbody>
</table>

The assumptions behind perfect competition are:

1.

2.

3.

4.
Label all the curves on the following graph, then answer the following questions:

1. In the figure 1, at an output level of L, I: What is average total cost?, II: What is average fixed cost?
   a) I: $A II: $E – $C
   b) I: $B II: $A
   c) I: $C II: $B
   d) I: $D II: $D – $B

2. In Fig. 1, where is the shut down condition?
   a) $A.
   b) $B.
   c) $C.
   d) $D.

3. In Fig 1. Why does the distance between curves II and III reduce
   a) Because average fixed cost is declining
   b) Because average variable cost is increasing
   c) Because marginal cost is increasing
   d) Because average total cost is increasing

4. The marginal cost (MC) curve intersects the
   a) ATC, AVC and AFC curves at their minimum points.
   b) ATC and AFC curves at their minimum points.
   c) AVC and AFC curves at their minimum points.
   d) ATC and AVC curves at their minimum points.
   e) ATC curve at its minimum point.
5. A perfectly competitive firm will maximise profit when

a) Total revenue exceeds total costs
b) Marginal revenue equals marginal cost
c) Price equals marginal cost
d) Price equals marginal benefit.

6. The long run is a period of time in which

a) the firm can hire all the workers that it wants to employ, but it does not have sufficient time to buy more equipment.
b) the firm is able to maximise profit.
c) the firm may want to build a bigger plant, but cannot do so.
d) the quantities of all inputs can be varied.

7. A firm is producing 50 units of output at a total cost of $250. The firm's average variable cost is $3 per unit. What is the firm's total fixed cost?

a) $250
b) $100
c) $5
d) $150

8. Whenever the marginal cost curve lies below the average total cost curve,

a) average fixed cost is increasing
b) average total cost is decreasing
c) average variable cost is increasing
d) average fixed cost is decreasing

9. A competitive firm is maximizing its short-run profit at the current market price of $11. The firm's marginal cost curve cuts the average variable cost curve when marginal cost is $6. Suppose the market price falls to $8. What should the firm do if it is to continue to maximise its short-run profit?

a) Increase output to compensate for the fall in price.
b) Increase output if this would raise the marginal product of labour.
c) Increase output if this reduces average total cost.
d) Shut down.
e) Produce less.  

(2003 & 2004 First Semester Finals)
10. When the price faced by a competitive firm was $5, the firm produced nothing in the short run. However, when the price rose to $10, the firm produced 100 tonnes of output. From this we can infer that

a) The firm’s marginal cost curve must be flat.
b) The firm’s marginal costs of production never fall below $5.
c) The firm’s average cost of production was less than $10.
d) The firm’s total cost of producing 100 tonnes is less than $1000.
e) The minimum value of the firm’s average variable cost lies between $5 and $10

11. In the short run, if a competitive firm experiences an increase in the cost of a fixed factor of production it will most likely

a) increase output
b) raise its price
c) decrease output
d) lower its price
e) leave output unchanged  
(2004 First Semester Final, 2005 Tute Quiz 3)

12. The shutdown point for a firm occurs when

a) total revenues are less than the cost of variable factors of production
b) total revenues are less than the cost of fixed factors of production
c) total profits are zero
d) total profits are negative

13. Which of the following would best be considered a fixed cost in operating a factory?

a) Interest on the loan used to buy the factory
b) The interest forgone when the owners use their own money to buy equipment
c) Security lighting
d) All of the above
e) None of the above  
(2005 Tutorial Quiz 3)

14. Suppose a firm has $1500 in variable costs and $500 in fixed costs when it produces 500 units of output and sells it for $5 per unit. If the price of the product drops to $3.50 each, should this firm continue operation in the short run?

a) No, because P < ATC
b) Yes, because P > ATC
c) No, because P < AVC
d) Yes, because P > AVC
e) No, because P < TC  
(2003, 2004 and 2005 Exams)
**Bonus Question**

1. Complete the following table for a Corn Chip producing firm in a perfectly competitive market.

<table>
<thead>
<tr>
<th>Quantity</th>
<th>$Price</th>
<th>FC</th>
<th>VC</th>
<th>TC</th>
<th>MC</th>
<th>Revenue</th>
<th>MR</th>
<th>Profits</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>100</td>
<td></td>
<td></td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td>140</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>300</td>
<td></td>
<td>80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td>400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Using your knowledge of profit maximisation as it relates to marginal revenue and marginal cost, what quantity will this firm produce?

Actually fill in the Profit column. Do the two methods reach the same conclusion?
The Quest for Profit and the Invisible Hand

PASS Topic 5

Key Concepts
Invisible hand theory
Accounting profit  Economic profit  Normal profit
Explicit costs  Implicit costs
How markets change over time in response to profits/losses
Long run equilibrium - what is it, how we get there

Discussion Question:
If everyone - buyers and sellers - is free to pursue their own selfish interests, what do you think will happen? What do economists generally think will happen?

Anarchy?

Efficiency?

Equity?
Suppose Ricky Ponting has decided to he’s had enough of cricket and wants to quit. His next best career is running a used car dealership. If his total revenue from the car dealership would be $3 million, and his accountant tells him that running the car dealership will cost him $2.8 million a year, then:

What is his accounting profit?

What is his economic profit?

Should he go back to cricket?

**Multi-choice Questions:**

1. If economic profits are negative but accounting profits are positive, then
   a) accounting profits are less than implicit costs.
   b) total revenues are greater than the sum of explicit and implicit costs.
   c) explicit costs exceed total revenues.
   d) normal profits are zero.
   e) explicit costs equal implicit costs.

2. If price exceeds average total cost in a competitive market at the current level of production,
   a) firms would be making short-run losses.
   b) firms would be making short-run profits.
   c) firms would be making long-run losses.
   d) firms would be making long-run profits.

3. If profits are being made by firms in a competitive industry, new firms will enter. This will
   a) shift the industry demand curve to the left, causing market price to fall.
   b) shift the industry demand curve to the right, causing market price to rise.
   c) shift the industry supply curve to the left, causing market price to rise.
   d) shift the industry supply curve to the right, causing market price to fall.
   e) shift both the industry demand and supply curves to the right, causing market price to be unchanged.
4. When a profit-maximising firm shuts down in the short run, it _________________ and it limits its losses to its _________________

a) has exited the industry; sunk costs
b) has exited the industry; variable costs
c) has exited the industry; zero
d) is still in the industry, marginal costs
e) is still in the industry, fixed costs

(2005 Tute Quiz 3)

5. Suppose demand falls in a competitive industry initially in long-run equilibrium. There will be _________________ until the _________________ profit earned by firms in the industry _________________.

a) exit; economic; rises above zero.
b) exit; normal; is restored.
c) equilibrium; normal and economic; falls.
d) entry; normal; is restored.
e) entry; economic; falls.

(2005 Tute Quiz 3)

6. As firms enter a competitive industry
a) output price falls and cost curves shift down.
b) output price falls and industry output increases.
c) output price falls and individual firms increase output.
d) market demand increases and industry output increases.
e) industry economic profits increase.

Short Answer Questions:

The drought, as we all know, has had a major effect on the entire Australian economy. What do you think would happen in each of these cases?

1. In 2011, level 47 water restrictions are in place and the price of tap water is hundred times higher than it is today. What do you think will happen to the market for rainwater tanks (assuming it still rains every so often in 2011)?

2. In 2013, a new breed of wheat has been invented that doesn’t need watering. As a result, farmers can grow their crops without spending as much money on irrigation. What do you think will happen to the market for wheat?
**Bonus Questions:**

1. A profit maximising firm in a perfectly competitive market faces the following cost schedule for producing commodity Q. Assume that the firm is typical of firms in the industry.

a) Complete the table below: (5 marks)

<table>
<thead>
<tr>
<th>Q</th>
<th>TC</th>
<th>FC</th>
<th>VC</th>
<th>AVC</th>
<th>ATC</th>
<th>MC</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>31.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b) If the price is $10 per unit, calculate the firm’s profits for each quantity. (1 mark)

c) What is the profit maximising quantity at that price? (1 mark)

d) The shutdown price is $____. Explain how to identify it. (2 marks)

e) Assuming that every firm can only make whole units, is this market at long run equilibrium? (Adapted from 2003 First Semester Final)

2. Suppose an industry is in long-run equilibrium and consumer demand for the good suddenly increases. Show, using diagrams, what happens to the market and an individual firm’s profits in the short-run and in the long-run.
Monopoly

PASS Topic 6A:

Key Concepts
Monopoly
Barriers to entry
Natural monopoly
Market power
Profit maximising for monopolists

Group Discussion

What is a monopoly? Why do they exist?

Previously, we drew a downward-sloping market demand curve, then a horizontal demand curve for the individual firm. How does this change for a monopoly?

If we were to draw a marginal revenue curve for an individual firm in a competitive market, what would it look like?

What does the monopoly’s marginal revenue curve look like?

Why does it look like this?

Assume that you’re a small firm in a perfectly competitive market. What rule do you use to maximise profit?

Assume now that you’re a monopolist. What rule do you use to maximise profit?
Multi-choice Questions:

1. A clothing store can sell 2 shirts for $20 each or 3 shirts for $18 each. At a quantity of 3 shirts sold, marginal revenue

   a) is $18.
   b) is $14.
   c) is $54.
   d) is $20.
   e) cannot be determined from the information given.

2. Like all firms, a monopolist produces the quantity such that

   a) $P = MC$
   b) $ATC = MR$
   c) $MC = MR$
   d) $MR = 0$

3. Which of the following is NOT a feature of a monopoly?

   a) The firm charges a higher price and produces less than the competitive market.
   b) Long-run profits or losses are eliminated.
   c) Entry barriers exist.
   d) The firm produces a quantity where $MR = MC$.

4. Assume that a profit maximising monopolist is producing a quantity such that marginal revenue exceeds marginal cost. We can conclude that the

   a) Firm is maximising profit.
   b) Firm’s output is smaller than the profit maximising quantity.
   c) Firm’s output is larger than the profit maximising quantity.
   d) Firm’s output does not maximise profit, but we cannot conclude whether the output is too large or too small.
   e) None of the above.

5. Why does a monopoly produce less than a competitive industry with identical costs?

   a) There are more firms in a competitive industry and this means there is more money to finance production.
   b) Marginal cost does not have to equal marginal revenue for a monopoly to maximise its profits because it faces no competition from other sellers.
   c) A monopoly must trade off price against quantity while each individual firm in a competitive industry is a price taker.
   d) A monopoly makes most profit when it restricts output to the point where marginal cost equals price.
6. Which of the following is true of a profit-maximising monopoly facing a straight-line demand curve?

a) it will always produce where demand is elastic.
b) it will never produce where demand is inelastic because raising prices would increase its profits.
c) both a. and b.
d) it will always produce where demand is unit elastic and where revenue is maximised.
e) it will always produce where demand is inelastic because higher prices raise total revenue.

7. The marginal revenue curve of a monopoly will

a) increase at a faster rate than price because marginal revenue is always greater than price.
b) decrease at a faster rate than price because any reduction in price applies to all units sold.
c) decrease at a faster rate than price because any reduction in price applies only to the extra units sold.
d) lie above the demand curve.
e) equal the demand curve.

8. For a monopoly with a straight-line demand curve, when demand is:

a) inelastic, marginal revenue is negative.
b) elastic, marginal revenue is greater than demand.
c) perfectly inelastic, marginal revenue equals demand.
d) elastic, marginal revenue is positive and increasing.
e) unit-elastic, marginal revenue reaches its maximum.

9. If a firm collects $80 in revenues when it sells 4 units, $100 in revenues when it sells 5 units, and $120 when it sells 6 units, one can infer the firm is more likely to be

a) a perfect competitor
b) a monopolist
c) a perfect competitor or a monopolist
d) an imperfect monopolist

(2005 First Semester Final)

10. For a natural monopolist, total fixed costs are ________, while marginal costs are ________.

a) huge; low.
b) low; huge.
c) low; low.
d) huge; huge.
e) lower than those of other monopolists; lower than those of other monopolists.
Short Answer Question

The data in the following table are for a monopolist. The firm is producing a special type of fertiliser for home gardeners.

<table>
<thead>
<tr>
<th>Labour (days)</th>
<th>Output (tonnes)</th>
<th>Price ($)</th>
<th>Total cost ($)</th>
<th>Total revenue ($)</th>
<th>Marginal revenue ($)</th>
<th>Marginal cost ($)</th>
<th>Profit ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>100</td>
<td>10</td>
<td></td>
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<td></td>
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<td>4</td>
<td>11</td>
<td>78</td>
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<td>5</td>
<td>17</td>
<td>67</td>
<td>560</td>
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<td>6</td>
<td>22</td>
<td>56</td>
<td>670</td>
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<td>7</td>
<td>26</td>
<td>48</td>
<td>780</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>8</td>
<td>29</td>
<td>42</td>
<td>890</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>31</td>
<td>38</td>
<td>1000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>32</td>
<td>36</td>
<td>1110</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a) Calculate the total revenue.

b) Calculate the marginal revenue and the marginal cost.

c) Use a rule based upon marginal revenue and marginal cost to find the profit-maximising level of output and the price the monopolist should charge for its output to maximise profits.

What is the maximum profit for the firm?

Discussion Question

On the whole, do you think monopolies are a good or a bad thing?
Price Discrimination

PASS Topic 6B

**Key Concepts**

<table>
<thead>
<tr>
<th>Price Discrimination</th>
<th>Hurdle method of price discrimination</th>
</tr>
</thead>
</table>

1. Price discrimination means charging

a) each consumer the same price  
b) different prices to different consumers because production costs are different  
c) the same price to all consumers though production costs are different  
d) different prices to different consumers when production costs are the same

2. Why does an airline charge lower prices to people willing to stay away a Saturday night?

a) People willing meet this condition have an inelastic demand and so will only buy a ticket if the price is low.  
b) This is a low-cost way of identifying travellers who are likely to have an elastic demand for air travel at the regular price.  
c) By price discriminating the airline can charge a price less than marginal cost and still maximise its profit.  
d) If more people fly the airline’s total costs will fall because of economies of scale.

3. Which of the following is not a form of the hurdle method of price discrimination?

a) Rebate coupons  
b) Cheap movies on Tuesday nights  
c) Charging every customer their exact reservation price  
d) Super saver flight deals
The following information should be used to answer questions 4 and 5:

<table>
<thead>
<tr>
<th>Customer</th>
<th>Reservation Price ($/book)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q</td>
<td>60</td>
</tr>
<tr>
<td>R</td>
<td>54</td>
</tr>
<tr>
<td>S</td>
<td>48</td>
</tr>
<tr>
<td>T</td>
<td>42</td>
</tr>
<tr>
<td>U</td>
<td>36</td>
</tr>
<tr>
<td>V</td>
<td>30</td>
</tr>
<tr>
<td>W</td>
<td>24</td>
</tr>
<tr>
<td>X</td>
<td>14</td>
</tr>
</tbody>
</table>

Campus Bookstore is the only textbook supplier in the town, a profit-maximising business. It has 8 customers, Q to X, each with the reservation price as shown.

4. If the cost of each book is $12, how much must the bookstore charge for this book if it must charge a single price for the book?
   a) $12   b) $18   c) $24   d) $30   e) $36

5. If the bookstore can charge two different prices for this book, with the same marginal cost, the list price for the book will be _____ and the discounted price for the book will be _____.
   a) $18; $12   b) $18; $18   c) $36; $24   d) $36; $36   e) $48; $40

*(2004 First Semester Final)*
Thinking strategically

PASS Topic 7

Key Concepts

<table>
<thead>
<tr>
<th>Game theory</th>
<th>Strategic decision making</th>
</tr>
</thead>
<tbody>
<tr>
<td>Players</td>
<td>Strategies</td>
</tr>
<tr>
<td></td>
<td>Payoffs</td>
</tr>
<tr>
<td>Payoff matrix</td>
<td>Dominated strategy</td>
</tr>
<tr>
<td>Dominant strategy</td>
<td>Prisoner’s dilemma.</td>
</tr>
<tr>
<td>Nash equilibria</td>
<td></td>
</tr>
</tbody>
</table>

Multi-Choice Questions

Questions 1-3 use the following payoff matrix:

<table>
<thead>
<tr>
<th>Firm A</th>
<th>Invest</th>
<th>Don’t Invest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Invest</td>
<td>$200,000</td>
<td>$1,000</td>
</tr>
<tr>
<td></td>
<td>$50,000</td>
<td>$800,000</td>
</tr>
<tr>
<td>Don’t Invest</td>
<td>$100,000</td>
<td>$50,000</td>
</tr>
<tr>
<td></td>
<td>$150,000</td>
<td>$100,000</td>
</tr>
</tbody>
</table>

1. If Firm A invests and Firm B chooses not to, then their respective payoffs are:
   a) A - $100,000; B - $150,000
   b) A - $200,000; B - $150,000
   c) A - $100,000; B - $100,000
   d) A - $150,000; B - $100,000

2. A dominated strategy is
   a) A-invest
   b) A-don’t invest
   c) B- don’t invest
   d) Both b) and c)

3. The Nash equilibrium is
   a) A-don’t invest B-invest
   b) A-invest B-don’t invest
   c) A- don’t invest B don’t invest
   d) a) and b)
4. For the above payoff matrix, a Nash equilibrium is

a) A-don’t invest B-invest
b) A-invest B-don’t invest
c) A- don’t invest B don’t invest
d) a) and b)

5. Which of the following is not true of Nash equilibrium in a game involving players A and B?

a) Given the strategies of player B, player A has chosen the highest payoff strategy
b) Neither A nor B wants to choose a different strategy
c) Both players are content with their choice
d) Both players must have a dominant strategy

6. Which of the following circumstances does not involve game theory?

a) A local gas station owner wondering how his competition across the street will react to his decision to lower prices.
b) Negotiating a salary when two firms have made offers.
c) Deciding whether to have an extramarital affair.
d) Firm behaviour in a perfectly competitive market.
e) Playing poker.

7. For a game involving players A and B with strategies X and Z, which of the following is not a requirement for a prisoners dilemma?

a) Player A must have a dominant strategy
b) Player B must have a dominant strategy
c) A Nash equilibrium must exist
d) The payoff to playing their dominant strategies must be more than the payoff to their dominated strategy.
Short Answer Questions

John owns Tanya’s coffee shop at UQ’s St Lucia campus. Lucy owns the rival coffee shop on campus, Wordsmiths. Currently, both charge $3.00 for a cappuccino and each week earn revenues of $4,000 from selling cappuccinos. John is considering cutting his price to $2.60, which, if Lucy keeps her price constant, would increase his revenues to $5,000 while Lucy’s would fall to $3,000. If Lucy cuts her price to $2.60 while John keeps his price constant, Lucy’s revenue will increase to $5,000 while John’s revenue will fall to $3,000. John and Lucy will each receive $3,500 if they both lower their price.

(Adapted from 2005 First Semester In-tute quiz)

1. Draw the payoff matrix for this situation.

2. For John, leaving his price at $3.00 is a _______ strategy.

3. Does Lucy have a dominant strategy? If yes, what is it?

4. Assuming that John and Lucy are unable to make their decision cooperatively, what will be the outcome of this business game? Is there a special name for games with these sorts of features?
Bonus Questions

1. A small regional airline is considering offering service to major city market. A large carrier already provides service to this major market. The pre-existing large carrier has two choices, discount tickets or maintain prices. The major airline has current profits of $1,000,000. If the smaller airline enters the market, the major carrier will lose a quarter of its profits if it maintains prices, with the small airline picking up $100,000 worth of business. If the large airline discounts, its profit will fall to $650,000, but the regional carrier will lose $200,000. Complete the following payoff matrix

<table>
<thead>
<tr>
<th></th>
<th>Regional Carrier</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Enter</td>
<td>Don’t</td>
</tr>
<tr>
<td>Large Carrier</td>
<td>Discount</td>
<td>-200,000</td>
</tr>
<tr>
<td></td>
<td>650,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maintain prices</td>
<td>250,000</td>
</tr>
<tr>
<td></td>
<td>750,000</td>
<td></td>
</tr>
</tbody>
</table>

a) Does either player have a dominant strategy? If so, what?

b) Is there a Nash Equilibrium? If yes, what is it?

c) Is this game a prisoner’s dilemma? Explain

2. Suppose that assessment for your economics class is graded on a “curve” such that your grade on a quiz depends not only on your performance, but also on the performance of others in the class. You and your classmates have two choices, to study for a quiz or not. If you and your classmates study for a quiz, you will receive B’s. If you study and they do not, you will receive an A and they will fail the quiz. If you choose not to study and neither do your classmates, you will receive C’s. But if your classmates study and you do not, they receive A’s and you will fail. Assume that all of your classmates make the same choice.

a) Who are the players? What are each player’s strategies?

b) Construct the payoff matrix.

c) Is there a dominant strategy or equilibrium in this case? If so, what is it?

(2005 First Semester Final)

3. “People who want free trade can be seen as trying to get countries out of prisoner’s dilemma type situations. We’d all be better off if everyone dropped protectionist policies, but individual countries see it as in their best interest to shield domestic interests.”

Explain how free trade negotiations can be viewed as prisoner’s dilemmas. What does this tell us about free trade?

How might economists get around this problem?
Notes
The Economics of Information

PASS Topic 8:

Key concepts
Asymmetric information  Lemons model
Moral hazard  Adverse selection
How we deal with information problems.

Multi Choice Questions:

1. The lemons model explains how
   a) Asymmetric information decreases the average quality of goods for sale
   b) People with lower quality goods are more likely to sell them
   c) Reservation prices for used goods are lower
   d) There is a downward spiral in the average quality of used cars
   e) All of the above

2. Consumers know that some fraction X of all used cars produced and sold in the market are defective. The defective ones cannot be identified except by those who own them. Assume for this problem that cars do not depreciate with use. Suppose the consumers are risk-neutral with a reservation price of a used car of $14 800. Good used cars are worth $16 000 and lemon used cars are worth $8 000 to their owners. What is the fraction X?
   a) 0.85
   b) 0.75
   c) 0.67
   d) 0.33
   e) 0.15 (2005 First Semester Final)

3. According to the textbook, middlemen
   a) add no value to economic activity.
   b) only add value if the consumer gets a good deal.
   c) only add value to themselves.
   d) provide value through information and coordination.
   e) exist for no reason. (2006 First Semester Final)

4. In markets with incomplete information, middlemen tend to __________ total economic surplus by __________.
   a) reduce, raising price
   b) reduce; adding nothing of value
   c) increase; raising price
   d) increase; matching sellers with buyers with higher reservation prices
5. When the seller possesses more information than the buyer

a) the buyer is always exploited.
b) the buyer never buys.
c) sellers of better than average quality used goods will have difficulty getting their price.
d) sellers of lower than average quality used goods will have difficulty getting their price.
e) the quality of the used goods offered for sale will be average.

(2006 First Semester Final)

6. The optimal amount of information

a) is the most that you can obtain since more information is always preferred to less.
b) is where there is the greatest difference between the marginal benefit of the last unit of information and its marginal cost.
c) is where the cost of obtaining information is minimized.
d) is where the marginal benefit of the last unit of information and the marginal cost of obtaining the information are equal.

7. Which of the following is an example of a moral hazard problem?

a) A homeowner purchasing insurance
b) A homeowner buying a larger, safer car
c) Not locking the doors on your vehicle once you’ve bought insurance
d) A homeowner installing stronger locks and doors

8. Which of the following is an example of adverse selection?

a) An insurance company refusing to insure young male drivers.
b) An insurance company charging young male drivers more than young female drivers.
c) An insurance company charging more for students with bad grades
d) Unsafe drivers buying more car insurance

Short Answer Question

1. What do economists mean when they talk about principles and agents? What problems are associated with this situation? What ways are there to get around it?
Bonus Questions:

1. How do we deal with information failures? Give some real world examples of how people get around these problems.

2. What do Volvo drivers have to do with the Economics of Information?

3. What is conspicuous consumption? What does it have to do with the Economics of Information?
Externalities and Property Rights

PASS Topic 9

<table>
<thead>
<tr>
<th>Key Concepts</th>
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<tbody>
<tr>
<td>Positive Externality</td>
<td>Negative Externality</td>
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<tr>
<td>External Benefit</td>
<td>External Cost</td>
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<tr>
<td>Social Benefit</td>
<td>Social Cost</td>
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<tr>
<td>Remedies to externality problems</td>
<td></td>
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<tr>
<td>Property Rights</td>
<td>Coase Theorem</td>
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</tbody>
</table>

Multi-choice Questions:

1. If my neighbour plants roses which I find appealing,
   a) my neighbour receives an external benefit.
   b) my neighbour receives an external cost.
   c) I receive an external benefit.
   d) I receive an external cost.

2. Marginal social cost equals
   a) average social cost minus average private cost.
   b) marginal private cost plus average external cost.
   c) average social cost minus private marginal cost.
   d) marginal private cost plus marginal external cost.

3. For a competitive market with a negative externality, firms produce an:
   a) efficient amount of output.
   b) amount less than the efficient quantity.
   c) amount more than the efficient quantity.
   d) amount sometimes less and sometimes more than the efficient quantity.
   e) amount and quality of output most desired by society.

4. Suppose the production of a good has very large negative externality associated with it. Government should correct for the
   a) over allocation of resources devoted to its production by taxing the good.
   b) under allocation of resources devoted to its production by subsidizing the good
   c) over allocation of resources devoted to its production by subsidizing the good
   d) under allocation of resources devoted to its production by taxing the good
5. If positive externalities are associated with the consumption of a good, the equilibrium price of the good is too

a) high and the equilibrium quantity too high  
b) low and the equilibrium quantity too high  
c) high and the equilibrium quantity too low  
d) low and the equilibrium quantity too low

6. The optimum amount of a negative externality associated with the production of a good

a) is zero since negative externalities harm society  
b) should be determined by the firms producing the good  
c) should be determined by the consumers of the good  
d) should be determined by the marginal cost of cleaning up the negative externality and the marginal benefits associated with that level of cleanup

7. The Coase Theorem states that:

a) Efficient resolution of externalities is achieved by assigning rights to the injured person.  
b) Efficient resolution of externalities is achieved by making the person generating the negative externality pay for the damage caused.  
c) Private negotiations between people will lead to an efficient resolution of externalities regardless of who has the property rights, as long as the property rights are defined and transaction costs are low enough.  
d) Both (a) and (b).

The next two questions relate to the following table. The table indicates the costs and benefits associated with the cleanup of a toxic chemical that is being dumped into the Brisbane River.

<table>
<thead>
<tr>
<th></th>
<th>With cleanup</th>
<th>Without cleanup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gains to polluter</td>
<td>$2 million</td>
<td>$4 million</td>
</tr>
<tr>
<td>Gains to community downstream</td>
<td>$6 million</td>
<td>$0.25 million</td>
</tr>
</tbody>
</table>

8. If there are no pollution laws in effect and no penalties for the polluter for dumping the chemical into the river and if the polluter and the community do not communicate with each other, what will be the course of action of the polluter and will it be socially efficient?

a) The polluter will cleanup and the outcome will be socially efficient  
b) The polluter will not cleanup and the outcome will be socially efficient  
c) The polluter will not cleanup and the outcome will not be socially efficient  
d) The polluter will cleanup and the outcome will not be socially efficient

9. If there are no pollution laws in effect and no penalties for the polluter for dumping the chemical into the river and if the polluter and the community can communicate with each other, will the polluter clean up the pollution?

a) No, even with communication the polluter will continue to dump pollution in the river  
b) The community could offer the polluter $1 million and the polluter would cleanup  
c) The community could offer the polluter $2.5 million and the polluter would cleanup  
d) The community could offer the polluter $2.5 million and the polluter would not cleanup
Short Answer Questions

1. There has been a lot of talk about ‘carbon taxes’ and ‘emissions trading schemes’ in the news over the last year. What are they, what are they trying to solve and what is the difference?

2. Why does the government subsidize higher education? Show with the aid of diagrams.
Bonus Question

1. 
   a) Try to think of as many examples of negative externalities as possible.
   
   b) Draw a diagram to show the difference between the market outcome and the socially optimal outcome in these cases.
   
   c) Why are the market outcomes inefficient in these cases?
   
   d) How might a government use taxation policy to produce a more efficient outcome?
   
   e) What are some other solutions, other than tax?
Public Goods

PASS Topic 10

Key Concepts

<table>
<thead>
<tr>
<th>Public goods</th>
<th>Tragedy of the Commons</th>
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</thead>
<tbody>
<tr>
<td>Rivalrousness</td>
<td>Excludability.</td>
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</tbody>
</table>

Multiple Choice Questions

1. An example of a good that is nonexcludable but rivalrous is
   a) Bread
   b) National Defence
   c) Pay-per-view TV
   d) Fish in international waters

2. When should the government provide public goods?
   a) Whenever a good can't be provided by the private sector.
   b) As often as possible.
   c) Never.
   d) Only when the benefits of providing that good outweigh the costs.

3. The clearest example of a good produced by the government that has the features of rivalry and excludability is
   a) national defence.
   b) postal delivery.
   c) police protection.
   d) the judicial and legal system.
   e) highways.

   (2006 First Semester Final)

4. Tragedies of the commons can be caused, or worsened, by:
   a) Britney Spears having hair
   b) customary practices regulating the sharing of community resources
   c) a monopoly owning the common resource
   d) governments failing to assign property rights to the over used resource
   e) none of the above.

   (Adapted from 2003 First Semester Final)
PASS Mock Exam

The mock exam will be written by PASS leaders as the semester progresses.

It will be distributed (free) in PASS classes in the final week. How you gain access to the answers will also be explained in PASS classes. Neither the mock exam nor its answers will be available in any other way.