ECON10004: INTRODUCTORY MICROECONOMICS

PRE-TUTORIAL TASKS FOR TUTORIAL 2
(Week beginning July 30)

Minimum Reading

GKM – chapter 2 and 3
Borland – Case studies 1.2, 1.5 (either edition).

Key Concepts

Microeconomics
Theory
Model
Scarcity
Cost-benefit principle
Opportunity cost
Sunk cost
Marginal benefit
Marginal cost
Incentives
Rationality

Review Questions

1. The publisher Murdoch Cengage is thinking of publishing a book on 'The Life and Times of Julia Gillard'. Murdoch will incur three types of costs in publishing such a book. An up-front royalty payment of $100 would need to be made to Ms Gillard prior to her writing the book. The cost of typesetting and printing the book would be $1000. And the cost of advertising would be $250. Murdoch decides that each copy of the book should be sold for $25. Suppose that after Ms Gillard has written the book, but before it has been sent to typesetting, Murdoch must decide whether to proceed with publication. To proceed with publication, Murdoch must think that revenue from book sales will be at least as great as the opportunity cost of production.
What is the minimum number of copies he would need to expect to sell if he wants to publish?

2. Wally is considering starting his own website development business. To start the business, he must reduce to half-time in his current job, from which he earns $50,000 per year. As well, he has already paid $5,000 to study a web developer's course, and would have to use $10,000 from his savings to pay for extra computer equipment he would need in the business. The computer equipment could be resold for $5,000 at the end of one year if Wally decided to discontinue his business. There is currently an interest rate of 10% per annum. What will be Wally's opportunity cost from operating the business for one year?

3. You are the manager of a gym, and you must decide how many customers to admit each hour. Assume that each customer stays exactly one hour. Customers are costly to admit because they inflict wear and tear on the exercise equipment. Moreover, each additional customer generates more wear and tear than the customer before. As a result, the gym faces increasing marginal cost:

Qty of customers per hour	MC per customer
0	
1	$14
2	$14.50
3	$15
4	$15.50
5	$16
6	$16.50
7	$17

a) Suppose that each additional customer pays $15.25 for a one-hour work-out. Use the marginal benefit/marginal cost rule to find the optimal number of customers.

b) The price of a one-hour work-out increases to $16.25. What is the optimal number of customers per hour that you should admit now?

4. Georgia and Lauren go to a karate class. Both must choose how many classes per week to attend. Each class costs $20. The following table shows Georgia's and Lauren's estimates of the marginal benefit that each of them gets from each class per week.

Qty of classes	Lauren's MB of each class	Georgia's MB of each class
0		
1	$23	$28
2	$19	$22
3	$14	$15
4	$8	$7

Use the marginal benefit/marginal cost rule to find the optimal number of classes for Lauren and for Georgia.

5. To earn extra money in the summer, you grow tomatoes and sell them at a farmers' market for 30 cents per kilo. By adding compost to your garden, you can increase your yield as shown in the table below. If compost costs 50 cents per kilos, and your goal is to maximize your earnings from tomato sales minus costs, how many kilos of compost should you add?

Kilos of compost	**Kilos of tomatoes**
0	100
1	120
2	125
3	128
4	130
5	131
6	131.5

6. Economists often attempt to measure the value of time by using wage rates or average salary levels. According to these measures, the value of time in growing economies is always rising. How does the growing value of time affect the types of services and products introduced into the economy? How might this increase in the value of time be related to increasing consumption of take-away food, and greater incidence of households contracting out services such as gardening and cleaning?

7. Suppose for a new electric car the total benefit function, TB, is given by TB = $f(Q) = 9\,Q - 0.5\,Q^2$, and the total cost function, TC, is given by TC = $f(Q) = 2 + Q + 0.5\,Q^2$, where Q is a measure quantity.
a) Derive functions for marginal benefit and marginal cost; i.e. take the first derivative.
b) Use the MB = MC rule to determine the Q that maximises net benefit.
c) Calculate TB, TC and net benefit.

8. Kath and Kim are neighbours. They spend most of their time working, but they leave some time for their favourite activities – making muffins and smoothies. Kath takes five minutes to make a smoothie and half an hour to make a tray of muffins. Kim takes 15 minutes to make a smoothie and one hour to make a tray of muffins.
a) What is each neighbour's opportunity cost of making a tray of muffins? Who has the absolute advantage in muffins? Who has the comparative advantage in muffins?
b) If Kath and Kim trade food with each other, who will trade away muffins in exchange for smoothies?