Introductory Microeconomics

Tutorial 2

Nhan La

Task 1

- Opportunity cost: The value of resources used in that action that are then not available for the next best alternative use.

- To calculate opportunity cost:
  - List all resources when one chooses an action that are not available for the alternative use.
  - Calculate the value of those resources in the next best alternative use.

- Sunk cost: Costs incurred prior to making a decision, hence will not vary with or depend on whether a decision is made on an action.

Task 1

a/

Resources		Value	Opportunity cost	Note
Time (1 yr)		$100,000	Yes	May also include interest
Office	Purchase	$50,000	No	Can sell anytime
	Interest	5,000	Yes	
Assistant	Salary	Not specified	Yes	Plus interest
	Management	Not specified	Yes	
	Furniture	Not specified	Yes	Plus interest

Task 1

b/

Resources		Value	Opportunity cost	Note
Fuel		$5,000	No	Sunk cost
Pilot wage		$1,000	No	Sunk cost
Flight attendants	No passengers	$500	No	Sunk cost
	Extra cost with passengers	$500	Yes	
Cleaning		$100	Yes	
Total opportunity costs		$600		

Task 2

Hours of tutoring per week	Total opportunity cost	Marginal cost	Total payment	Marginal payment (benefit)
0	0		0	
1	$50	$50	$120	$120
2	$110	$60	$200	$80
3	$180	$70	$260	$60
4	$260	$80	$300	$40
5	$350	$90	$320	$20

- From the 3rd hour onwards, MC > MB
- Hence, the optimal decision is to tutor for 2 hrs/week

Task 3

- Recall: $f(x) = x^n \Rightarrow f'(x) = nx^{n-1}$

- Total benefit: $TB = 10N - N^2$
- Marginal benefit: $MB = TC' = 10 - 2N$

- Total cost: $TC = 4 + N + 2N^2$
- Marginal cost: $MC = TC' = 1 + 4N$

- Benefit is maximized when: $MB = MC$

$\Leftrightarrow 10 - 2N^* = 1 + 4N^*$

$\Leftrightarrow N^* = 1.5$

Task 4

	Cost of 1 meal (in baskets)	Cost of 1 basket (in meals)	Comparative advantage in	Willing to trade
Seldon	1/2	2	Baskets	Baskets for meals
Leonard	1/6	6	Meals	Meals for baskets

- Both will gain from trade if price of laundry baskets in meals (or vice versa) doesn't exceed their opportunity cost.
- If price too low (too few meals for 1 basket), Seldon won't trade.
  - The lowest rate Seldon accepts is 2 meals for 1 basket.
- If price too high (too many meals for 1 basket), Leonard won't trade.
  - The highest rate Leonard accepts is 6 meals for 1 basket.