eLearneconomics: Utility (1)

Student response

(a) Explain the difference between total utility and marginal utility.

(b) Explain the law of diminishing marginal utility.

(c) A consumer with income of $90 to spend on oranges and bananas is currently buying 20 oranges at $1.50 each and 30 bananas at $2.00 each. Her marginal utility from oranges is 6 and 8 from bananas. In order to maximise utility without exceeding income, the consumer should do what?

(d) A consumer with income of $90 to spend on oranges and lemons is currently buying 20 oranges at $1.50 each and 30 lemons at $2.00 each. Her marginal utility from oranges is 9 and 8 from lemons. In order to maximise utility without exceeding income, the consumer should do what?

(e) Julian has $400. Given the table, indicate how he could maximise his satisfaction.

Product	Price	Quantity	MU
Video games	8	30	120
Videos	10	16	90

eLearneconomics: Utility (1a)

Solutions

(a) Explain the difference between total utility and marginal utility.

Total utility is the aggregate satisfaction gained from consuming successive quantities of a good.

Marginal utility is the change in total utility resulting from the consumption of a given commodity.

MU = TU2 – TU1

(b) Explain the law of diminishing marginal utility.

As more of a good/service is consumed, the total utility will increase at a decreasing rate (i.e. MU will fall) or successive equal additions to consumption result in smaller amounts of extra utility.

(c) A consumer with income of $90 to spend on oranges and bananas is currently buying 20 oranges at $1.50 each and 30 bananas at $2.00 each. Her marginal utility from oranges is 6 and 8 from bananas. In order to maximise utility without exceeding income, the consumer should do what?

Is all income spent ($90)? does $\frac{\text{MUoranges}}{\text{price oranges}} = \frac{\text{MUbananas}}{\text{price bananas}}$? $\frac{6}{1.50} = \frac{8}{2}$ YES

20 x $1.50 = $30 } YES

30 x $2.00 = $60 } YES ans: do nothing, they are in equilibrium

(d) A consumer with income of $90 to spend on oranges and lemons is currently buying 20 oranges at $1.50 each and 30 lemons at $2.00 each. Her marginal utility from oranges is 9 and 8 from lemons. In order to maximise utility without exceeding income, the consumer should do what?

Is all income spent ($90)? does $\frac{\text{MUoranges}}{\text{price oranges}} = \frac{\text{MUlemons}}{\text{price lemons}}$? NO $\frac{9}{1.50} \neq \frac{8}{2}$

20 oranges x $1.50 = $30 } YES

30 lemons x $2.00 = $60 } YES ans: spend more on oranges and less on lemons

(e) Julian has $400. Given the table, indicate how he could maximise his satisfaction.

Product	Price	Quantity	MU
Video games	8	30	120
Videos	10	16	90

Is all income spent ($400)? does $\frac{\text{MUvideo games}}{\text{price video games}} = \frac{\text{MUvideos}}{\text{price videos}}$? NO $15\frac{120}{8} \neq \frac{90}{10}9$

$8 x 30 video games = $240 } YES

$10 x 16 videos = $160 } YES ans: spend more on video games and less on videos

eLearneconomics: Utility (2)

Student response

(a) Complete the table below.

Alan's Utility Schedule for Pizza (per day)		
Number of pizzas	Total utility (cents)	Marginal utility (cents)
1	500	
2	900	
3		250
4	1 300	
5		100

(b) Use the information in the table above to draw Alan's demand schedule for pizza per day.

(c) Define the law of diminishing marginal utility.

(d) Use the law of diminishing marginal utility to help you to explain why demand curves usually slope downwards to the right.

eLearneconomics: Utility (2a)

Solutions

(a) Complete the table below.

Alan's Utility Schedule for Pizza (per day)		
Number of pizzas	Total utility (cents)	Marginal utility (cents)
1	500	500
2	900	400
3	1 150	250
4	1 300	150
5	1 400	100

(b) Use the information in the table above to draw Alan's demand schedule for pizza per day.

Alan's Demand Schedule for pizza per day	
Price ($)	Quantity Demanded
1.00	5
1.50	4
2.50	3
4.00	2
5.00	1

(c) Define the law of diminishing marginal utility.

The law of diminishing marginal utility states that as quantity consumed increases the extra satisfaction (MU) from consuming an extra unit decreases.

(d) Use the law of diminishing marginal utility to help you to explain why demand curves usually slope downwards to the right.

The price consumers are prepared to pay for a good depends on the marginal utility they receive from it (i.e., there is a relationship between price and marginal utility / consumer will continue to consume up to the point where P = MU). Since MU falls as quantity increases (i.e., the law of diminishing MU) consumers will only buy larger quantities if the price falls to match their lower MU.

A demand curve must slope downward to the right with lower prices matching lower MUs of larger quantities consumed.

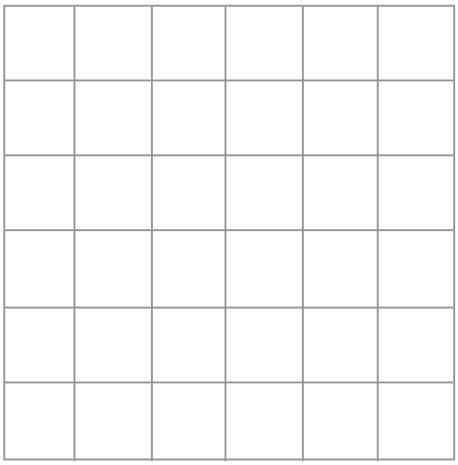
eLearneconomics: Utility (3)

Student response

(a) Complete the table below by filling in the missing numbers.

Mark Cambo's Utility Schedule for DVDs		
Quantity Consumed	**Total utility (cents)**	**Marginal utility (cents)**
1	1 000	
2		800
3	2 200	
4		100

(b) Use your completed table to plot Mark Cambo's demand curve for DVDs on the grid below.



(c) Use marginal utility to explain why Mark Cambo purchases more DVDs when the price of DVDs falls.

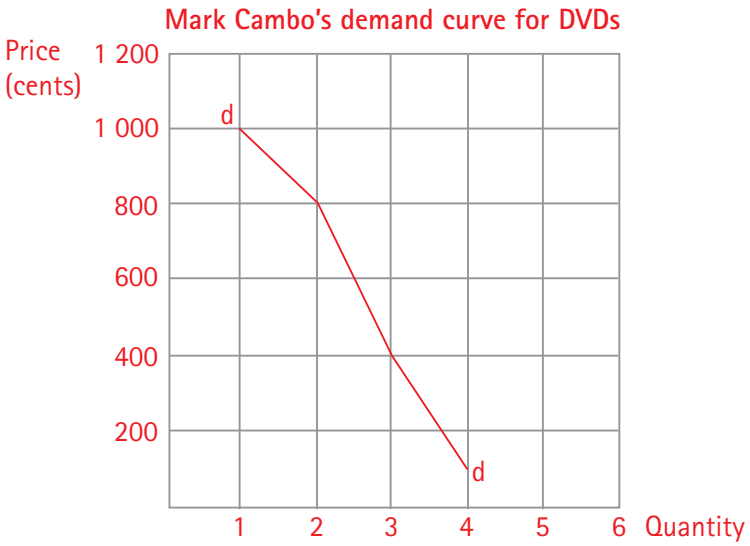
eLearneconomics: Utility (3a)

Solutions

(a) Complete the table below by filling in the missing numbers.

Mark Cambo's Utility Schedule for DVDs		
Quantity Consumed	Total utility (cents)	Marginal utility (cents)
1	1 000	1 000
2	1 800	800
3	2 200	400
4	2 300	100

(b) Use your completed table to plot Mark Cambo's demand curve for DVDs on the grid below.



(c) Use marginal utility to explain why Mark Cambo purchases more DVDs when the price of DVDs falls.

Mark will purchase DVDs until he reaches the point where P = MU (optimal purchase rule). When the price of DVDs falls, P < MU, there is an incentive for Mark to increase his consumption of DVDs. As he consumes additional units, MU will fall. Consequently, consumer equilibrium will be restored at a lower price and a corresponding lower marginal utility (P′ = MU′). A rational consumer (like Mark) will therefore increase the quantity he purchases when the price of a good falls.