



AP[®] Microeconomics 2002 Sample Student Responses

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3 MICCLH,
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(a) To select the correct combination of apples and oranges, marginal utility of each good in proportion to the last dollar spent on it must be considered. In this case,

$$\frac{MU_A}{P_A} = \frac{MU_B}{P_B} \quad (3 \text{ apples} \times \$1) + (2 \text{ oranges} \times \$2) = \$3 + \$4 = \$7 \checkmark$$

$$\frac{\text{the } MU \text{ of } 3^{\text{rd}} \text{ apple}}{\$1} = \frac{10}{1} = 10$$

$$\frac{MU \text{ of the } 2^{\text{nd}} \text{ orange}}{\$2} = \frac{20}{2} = 10 \quad \rightarrow 10 = 10$$

The consumer will purchase 3 apples and 2 oranges

(b) (i)

$$\frac{\text{the } MU \text{ of } 4^{\text{th}} \text{ apple}}{\$1} = \frac{5}{1} = 5$$

$$\frac{MU \text{ of the } 4^{\text{th}} \text{ orange}}{\$2} = \frac{10}{2} = 5 \quad \rightarrow 5 = 5$$

$$(3 \text{ apples} \times \$1) + (4 \text{ oranges} \times \$2) = \$3 + \$8 = \$11 \checkmark$$

4 apples & 4 oranges will be purchased

(ii) TU of 4 apples + TU of 4 oranges =

$$50 + 75 = 125 \text{ utils}$$

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(c) (i) 4 apples and 2 oranges will be purchased
 $(4 \text{ apples} \times \$1) + (2 \text{ oranges} \times \$4) = \$4 + \$8 = \$12$ ✓

$$\frac{\text{MU of 4th apple}}{\$1} = \frac{5}{1} = 5$$

$$\frac{\text{MU of 2nd orange}}{\$4} = \frac{20}{4} = 5 > 5 = 5$$

(ii) TU of 4 apples + TU of 2 oranges =
 $50 + 50 = 100 \text{ utils}$

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3. a) With the cost of apples at one dollar, and oranges at two dollars, the consumer will purchase three apples and two oranges.

A	0	B	0
Q	TU	Q	TU
0	0	0	0
1	30	1	30
2	35	2	50
3	45	3	65
4	50	4	75
5	52	5	80

The consumer will first purchase one apple as it offers more utility/dollar than the first orange. The consumer will then purchase one orange as one orange offers more utility/dollar than purchasing a second apple.

Using this reasoning the consumer will spend all seven dollars at 3 apples and 2 oranges.

b) c)

A	0	B	0
Q	TU	Q	TU
0	0	0	0
1	20	1	30
2	35	2	50
3	45	3	65
4	50	4	75
5	52	5	80

the consumer will purchase four apples and four oranges. Using the logic presented in part c, he/she will exhaust his/her ~~12~~ twelve dollars at this ~~combination~~ combination.

70	20	320
35	50	150
45	65	400
50	75	
52	80	
150	220	

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(c) The total utility the consumer will receive will be ~~370~~ ¹⁵⁰ utils. The consumer receives ~~150~~ ¹⁵⁰ utils from the apples and ~~120~~ ²²⁰ ~~140~~ utils from the oranges.

Apples	Oranges
1 20	1 30
35	50
45	65
50	75
150	220

A \$1		O \$4	
Q	TU	Q	TU
0	0	0	0
1	(20) ₁	1	(30) ₄
2	(35) ₂	2	(50) ₅
3	(45) ₂	3	(65)₃
4	(50) ₅	4	75
T	52	5	80
1/2		1/2	

The consumer will purchase 4 apples and two oranges.

	0	
(c)	20	The consumer will receive a total
35	50	utility of 230 utils (150 from app
45	80	80 from oranges)
50		
150		