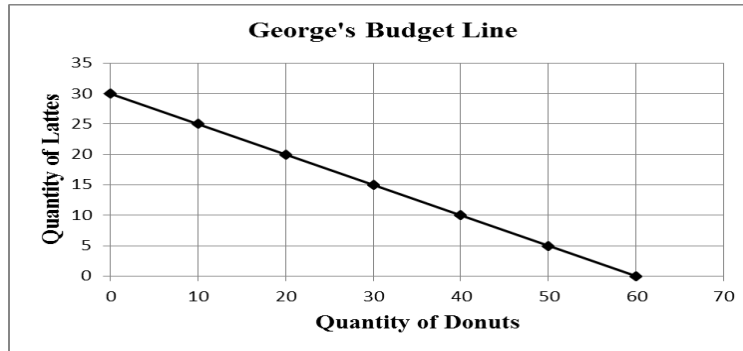


UNIT ONE EXAM: FRQ AND SOLUTIONS

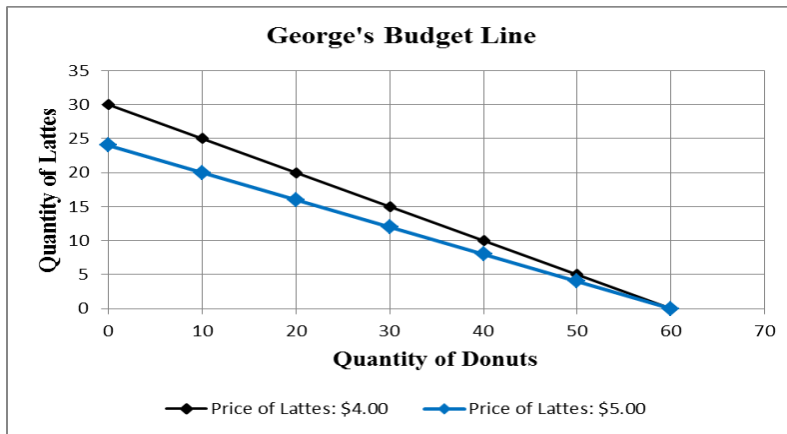
Below is the budget line for George. Answer the following questions based on his monthly budget constraint.



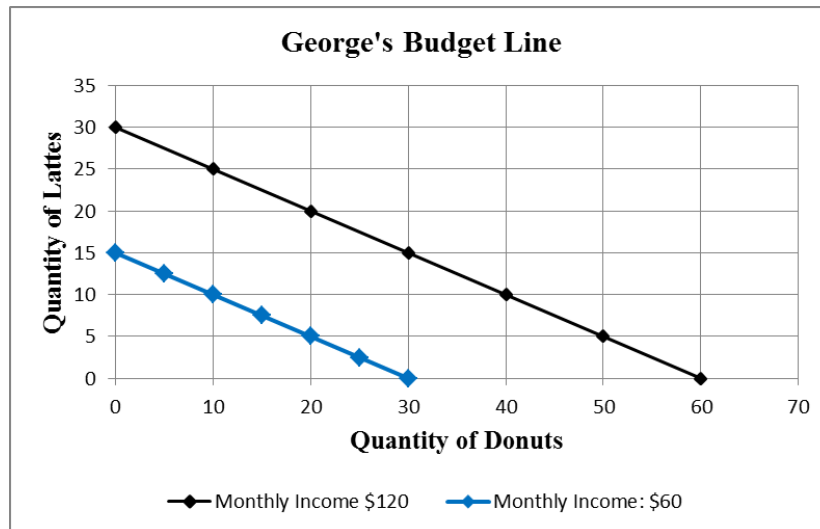
- Suppose the price of lattes is \$4.00. What is George's monthly income?
- Based on the income found in Part A. What is the price of donuts?
- Suppose the price of lattes increased to \$5.00. Draw in new budget line.
- Assume George's monthly income changes to \$60 (Keep the price of lattes at \$4.00). Draw the new budget line.

SOLUTION

- George has a monthly income of \$120.00. When George spends all his income on lattes we know he can purchase 30 of them. Remember: $\text{Income} / \text{Price} = \text{Quantity Purchased}$. Rearranging this equation we can solve for monthly income by multiply the price of lattes by quantity of lattes ($30 * \$4.00 = \120.00).
- We found that George has a monthly income of \$120. If he spends all that income on donuts he can purchase 60 donuts. Remember: $\text{Income} / \text{Price} = \text{Quantity Purchased}$. Rearranging this equation to solve for price we find the price of donuts is \$2.00 ($\$120 / 60 = \2.00).
- If the price of lattes increases to \$5.00 the number of lattes we can purchase in a month falls. This can be seen by a pivot in the budget constraint.



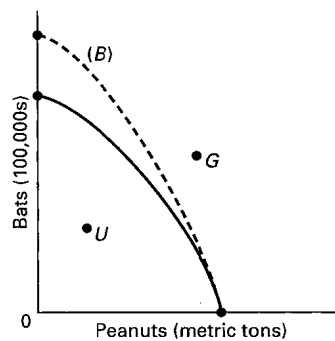
(d) A decrease in George's monthly income from \$120 to \$60 means he can purchase fewer lattes and donuts, shifting the budget line toward the origin.



[text: E pp. 9-11; MA pp. 9-11; MI pp. 9-11]

Look at the following production possibilities curve illustrating the possibilities in Sluggerville for producing bats and/or peanuts with the existing level of resources and technology.

- Show a point U that would indicate unemployed resources in Sluggerville.
- Draw a new curve B that illustrates the results of improved technology in the production of bats, but no change in the production efficiency of peanuts.
- Show a point G that would indicate a point that is currently unattainable in the production of peanuts and bats in Sluggerville.



SOLUTION

- Point U should be anywhere inside the curve.
- B should be extended beyond the original curve on the “bat” axis; every point on B should reflect more bats at each level of peanuts. At zero bats, the curve should be at the original point on the peanut axis.
- G could be any point outside the original curve.

The countries of East Wakovia and West Wakovia have the production possibilities tables for tobacco and corn shown below. Without trade East would produce at alternative C and West would produce alternative D. Note that the costs of producing tobacco and corn are constant in both countries.

EAST WAKOVIA'S PRODUCTION POSSIBILITIES TABLE

Product (lbs)	Alternative					
	A	B	C	D	E	F
Tobacco	20	16	12	8	4	0
Corn	0	4	8	12	16	20

WEST WAKOVIA'S PRODUCTION POSSIBILITIES TABLE

Product (lbs)	Alternative					
	A	B	C	D	E	F
Tobacco	15	12	9	6	3	0
Corn	0	5	10	15	20	25

- (a) In East Wakovia, the cost of producing:
 4 units of tobacco is _____ corn units.
 1 unit of tobacco is _____ corn units.
- (b) In West Wakovia, the cost of producing:
 3 units of tobacco is _____ corn units.
 1 unit of tobacco is _____ corn units.
- (c) Which country has the comparative advantage in corn production and which country has the comparative advantage in tobacco production?
- (d) If each nation specializes in the product where it has a comparative advantage and trades with the other, what will be the limits to the terms of trade for each tobacco unit?
- (e) If the nations do not specialize and trade but remain at alternative C in East and D in West, the combined production of East and West Wakovia will be how much tobacco and how much corn?
- (f) However, if the two nations specialize, the combined production of East and West Wakovia will be how much tobacco and how much corn?
- (g) What will be the total gain of tobacco and corn if the countries specialize and trade?

SOLUTIONS

- (a) In East Wakovia, the cost of producing:
 4 units of tobacco is 4 corn units.
 1 unit of tobacco is 1 corn units.
- (b) In West Wakovia, the cost of producing:
 3 units of tobacco is 5 corn units.
 1 unit of tobacco is 5/3 or 1 2/3 corn units.

- (c) Based on the opportunity cost of producing in each country, East Wakovia has a comparative advantage in tobacco while West has a comparative advantage in corn.
- (d) If each nation specializes in production where it has a comparative advantage and trades with the other, the limits to the terms of trade will be between 1 corn unit and $1 \frac{2}{3}$ corn units for each tobacco unit (or conversely between $\frac{3}{5}$ and 1 unit of tobacco for each unit of corn).
- (e) If the nations do not specialize and trade but remain at alternative C in East and D in West, the combined production of East and West Wakovia will be 18 units of tobacco and 23 corn units.
- (f) However, if the two nations specialize, the combined production of East and West Wakovia will be 20 units of tobacco and 25 corn units.
- (g) Total gains from specialization will be 2 units of tobacco and 2 corn units (20 – 18 units of tobacco and 25 – 23 corn units).