

Dr. Barry Haworth  
University of Louisville  
Department of Economics  
Economics 201-03  
Spring 2023

### **Homework #1 (due by 9:00pm on Wednesday, January 25)**

*Please submit your answers to this homework through the Assignment link at Blackboard. **No credit will be given for answers submitted in class or emailed to the professor, regardless of the excuse.** This includes unique excuses like my dog ate my homework or aliens showed up in my dorm and accidentally deleted my homework, as well as more traditional excuses like “I lost my Internet”. Please note that all submissions are final, again – regardless of the excuse (which includes “I accidentally hit the submit button”). When you go to Blackboard, you should see that you can save your answers, or “Save and Submit”. Use the Save and Submit button to submit your answers. If you are unfamiliar with Blackboard, then it would be a good idea to visit the class page at Blackboard and check out the homework assignments as they are posted.*

Please note that when Blackboard grades homework answers, more specifically – answers to the fill-in-the-blank questions – your answer must match exactly with the answer that Blackboard is looking for. Below, you’ll find some instructions on how to properly format these answers. Reading this section is strongly recommended.

#### **Homework Questions 1 and 3**

Your answers for question #1 and question #3 below involve your calculating the opportunity cost of producing a certain good. Formatting matters with these two answers. For this reason, **understand that your answer can be technically correct but graded as wrong because you didn't follow the directions provided below.** Given that formatting is considered part of your answer, a wrongly formatted answer is still a wrong answer.

Please note the following comments regarding formatting below.

*(i) Your answer in questions 1 and 3 may be expressed as a fraction (reduced to its simplest form) or as a decimal rounded to the nearest tenth. Do not write your answer as a compound fraction or mixed number. E.g., if you calculate an answer of  $\frac{6}{4}$ , then you should simplify that answer to  $\frac{3}{2}$  or record the answer as 1.5, but should not record the answer as  $\frac{6}{4}$  or  $1\frac{1}{2}$ .*

*(ii) Whole number answers in questions 1 and 3 may be expressed as a whole number or as a decimal rounded to the nearest tenth. E.g., if you calculate an answer of 5, then you may record your answer as 5 or 5.0. Similarly, if you calculate an answer of 3.25 or 3.75, then you should round those answers to 3.3 or 3.8 respectively.*

## Homework #1 Questions

1. Assume that the United States and Canada both produce red meat and fresh vegetables and that their respective PPCs which reflect this are provided below:

United States	A	B	C	D
Quantity of Red Meat	0	20	60	80
Quantity of Fresh Vegetables	40	30	10	0

Canada	W	X	Y	Z
Quantity of Red Meat	0	15	45	60
Quantity of Fresh Vegetables	20	15	5	0

- As the United States moves from pt. B to pt. C, the opportunity cost of producing each additional unit of red meat is \_\_\_\_\_ units of fresh vegetables.
- As the United States moves from pt. C to pt. B, the opportunity cost of producing each additional unit of fresh vegetables is \_\_\_\_\_ units of red meat.
- As Canada moves from pt. X to pt. Y, the opportunity cost of producing each additional unit of red meat is \_\_\_\_\_ units of fresh vegetables.
- As Canada moves from pt. Y to pt. X, the opportunity cost of producing each additional unit of fresh vegetables is \_\_\_\_\_ units of red meat.

2. Given the information in Question 1 about these two countries, select every correct statement (note: there may be a multiple number of correct statements below).

*Note that there is no partial credit on this question – you must get it completely correct, or your answer is incorrect.*

- The United States has a comparative advantage in producing red meat
- The United States has a comparative advantage in producing fresh vegetables
- Canada has a comparative advantage in producing red meat
- Canada has a comparative advantage in producing fresh vegetables
- Neither country has a comparative advantage in producing gold
- Neither country has a comparative advantage in producing crude oil

3. In a given period, Bill can use an acre of land to either grow 20 units of wheat, or 10 units of walnuts. In the same time period, Ted can use an acre of land to either grow 25 units of wheat or 20 units of walnuts. Given this information, answer each of the following questions below.

- For Bill, the opportunity cost of producing each additional unit of wheat is \_\_\_\_\_ units of walnuts.
- For Bill, the opportunity cost of producing each additional unit of walnut is \_\_\_\_\_ units of wheat.
- For Ted, the opportunity cost of producing each additional unit of wheat is \_\_\_\_\_ units of walnut.
- For Ted, the opportunity cost of producing each additional unit of walnut is \_\_\_\_\_ units of wheat.

4. Mexico and the Panama both produce refrigerators and coconut oil. The PPC for each country is provided below.

<b>Mexico</b>	<b>A<sub>1</sub></b>	<b>A<sub>2</sub></b>	<b>A<sub>3</sub></b>	<b>A<sub>4</sub></b>
Quantity of Refrigerators	0	20	70	80
Quantity of Coconut Oil	32	24	4	0

<b>Panama</b>	<b>B<sub>1</sub></b>	<b>B<sub>2</sub></b>	<b>B<sub>3</sub></b>	<b>B<sub>4</sub></b>
Quantity of Refrigerators	0	8	24	36
Quantity of Coconut Oil	45	35	15	0

Given the information above, select every correct statement (note: there may be a multiple number of correct statements below). *Note that there is no partial credit on this question – you must get it completely correct, or your answer is incorrect.*

- (a) Mexico has a comparative advantage in producing refrigerators
- (b) Mexico has a comparative advantage in producing coconut oil
- (c) Panama has a comparative advantage in producing refrigerators
- (d) Panama has a comparative advantage in producing coconut oil
- (e) Neither country has a comparative advantage in producing refrigerators
- (f) Neither country has a comparative advantage in producing coconut oil

*Use the PPC tables for Panama and Mexico from Question #4 to answer the question below.*

5. If there is improved technology within Panama that affects refrigerator production, then what effect will this improvement have on the opportunity cost of producing refrigerators and coconut oil within the Panama?

*note: there may be a multiple number of correct statements below and that there is no partial credit on this question – you must get it completely correct, or your answer is incorrect.*

- (a) the opportunity cost of producing refrigerators in Panama will decrease
- (b) the opportunity cost of producing refrigerators in Panama will increase
- (c) the opportunity cost of producing coconut oil in Panama will increase
- (d) the opportunity cost of producing coconut oil in Panama will decrease
- (e) the opportunity cost of producing refrigerators in Panama will not change
- (f) the opportunity cost of producing coconut oil in Panama will not change

Use the PPC tables for Panama and Mexico from Question #4 to answer the question below.

6. If there is improved technology within Panama that affects refrigerator production, then what effect will this improvement have on the comparative advantage situation within Panama (i.e. relative to Mexico)?

- (a) if this technological change is significant enough, then this change could cause the comparative advantage within Panama to switch from coconut oil to refrigerators
- (b) if this technological change is significant enough, then this change could cause the comparative advantage within Panama to switch from refrigerators to coconut oil
- (c) this technological change will not affect the comparative advantage of Panama
- (d) if this technological change is significant enough, then this change could cause Panama to have a comparative advantage in both coconut oil to refrigerators
- (e) if this technological change is significant enough, then this change could cause Panama to not have a comparative advantage in either coconut oil or refrigerators (i.e. Mexico would have it in both goods)

7. The table below represents the production possibilities for automobile tires and rubber mats.

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
Quantity of Automobile tires	0	15	25	33	39	43
Quantity of Rubber mats	50	40	30	20	10	0

Calculate the opportunity cost of producing automobile tires, and then calculate the opportunity cost of producing rubber mats. Once you've done this, indicate which of the following statements below is correct:

- (a) This PPC reflects constant opportunity cost
- (b) This PPC reflects decreasing opportunity cost
- (c) This PPC reflects increasing opportunity cost
- (d) This PPC reflects increasing opportunity cost with tires and decreasing opportunity cost with rubber mats
- (e) This PPC reflects increasing opportunity cost with rubber mats and decreasing opportunity cost with tires

*Question #8 is on the next page*

8. Assume that Country X has a production possibilities curve (PPC) for corn and tobacco, and that a series of events takes place. Predict the effect of each event on the PPC of Country X by matching the event from the first list (Event/Question Items) to the most likely item on the “Effect on Country X’s PPC (Answer Items)” list below.

*Note that it is possible to for different events to have the same effect (i.e. it’s possible to have the same answer for more than one event).*

**Event (Question Items):**

- a. How does an increase in demand for tobacco, a change that occurs during a period when Country X is producing at full employment, affect the PPC of Country X?
- b. How does an increase in the capital stock within Country X affect their PPC?
- c. How does migration of laborers from Country X into Country W affect the PPC of Country X?
- d. How does a decrease in unemployment affect the PPC of Country X?
- e. How does a decrease in the availability of inputs for tobacco affect the PPC of Country X?
- f. How does technological change within (only) corn affect the PPC of Country X?
- g. How does a decrease in overall productivity affect the PPC of Country X?
- h. How does an increase in the productivity associated with producing tobacco within Country X affect the PPC of Country X?
- i. How does an increase in unemployment within Country X affect the PPC of Country X?

**Effect on Country X’s PPC (Answer Items):**

- A. Movement from a point inside this PPC to a point that's on the PPC
- B. Movement from a point that's on this PPC to a point inside the PPC
- C. Movement between 2 points, up along the PPC (i.e. toward corn)
- D. Movement between 2 points, down along the PPC (i.e. toward tobacco).
- E. Increase (shift outward) in the PPC that affects both goods
- F. Decrease (shift inward) in the PPC that affects both goods
- G. Increase (pivot outward) in the PPC that affects only corn
- H. Increase (pivot outward) in the PPC that affects only tobacco
- I. Decrease (pivot inward) in the PPC that affects only corn
- J. Decrease (pivot inward) in the PPC that affects only tobacco