

Dr. Barry Haworth
University of Louisville
Department of Economics
Honors Economics 201-02
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Homework #1 (due by 9:00pm on Thursday, January 16)

*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 6

Your answers for question #1 and question #6 below involve your determining 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 6 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 $6/4$, then you should simplify that answer to $3/2$ or record the answer as 1.5, but should not record the answer as $6/4$ or $1\ 1/2$.

(ii) Whole number answers in questions 1 and 6 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. Afghanistan and India both produce wool and machinery. The PPC for each country is provided below:

| Afghanistan | A | B | C | D |
|-----------------------|----------|----------|----------|----------|
| Quantity of Wool | 0 | 9 | 27 | 45 |
| Quantity of Machinery | 30 | 24 | 12 | 0 |

| India | W | X | Y | Z |
|-----------------------|----------|----------|----------|----------|
| Quantity of Wool | 0 | 8 | 20 | 44 |
| Quantity of Machinery | 88 | 72 | 48 | 0 |

- As Afghanistan moves from pt. B to pt. C, the opportunity cost of producing each additional unit of wool is _____ units of machinery.
- As Afghanistan moves from pt. C to pt. B, the opportunity cost of producing each additional unit of machinery is _____ units of wool.
- As India moves from pt. X to pt. Y, the opportunity cost of producing each additional unit of wool is _____ units of machinery.
- As India moves from pt. Y to pt. X, the opportunity cost of producing each additional unit of machinery is _____ units of wool.

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.

- Afghanistan has a comparative advantage in producing wool
- Afghanistan has a comparative advantage in producing machinery
- India has a comparative advantage in producing wool
- India has a comparative advantage in producing machinery
- Both Afghanistan and India have a comparative advantage in producing wool
- Both Afghanistan and India have a comparative advantage in producing machinery
- Neither country has a comparative advantage in producing wool
- Neither country has a comparative advantage in producing machinery

3. Japan and the United States both produce automobiles and crude petroleum (crude oil). The PPC for each country is provided below.

| Japan | A₁ | A₂ | A₃ | A₄ |
|-----------------------------|----------------------|----------------------|----------------------|----------------------|
| Quantity of Automobiles | 0 | 25 | 40 | 60 |
| Quantity of Crude Petroleum | 24 | 14 | 8 | 0 |

| United States | B₁ | B₂ | B₃ | B₄ |
|-----------------------------|----------------------|----------------------|----------------------|----------------------|
| Quantity of Automobiles | 0 | 16 | 36 | 64 |
| Quantity of Crude Petroleum | 80 | 60 | 35 | 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) Japan has a comparative advantage in producing automobiles
- (b) Japan has a comparative advantage in producing crude petroleum
- (c) The U.S. has a comparative advantage in producing automobiles
- (d) The U.S. has a comparative advantage in producing crude petroleum
- (e) Both Japan and the U.S. have a comparative advantage in producing automobiles
- (f) Both Japan and the U.S. have a comparative advantage in producing crude petroleum
- (g) Neither country has a comparative advantage in producing automobiles
- (h) Neither country has a comparative advantage in producing crude petroleum

Use the PPC tables for Japan and the United States from above to answer the question below.

4. If there is an increase in productivity within the United States that affects automobile production, then what effect will this have on the opportunity cost of producing automobiles and crude petroleum within the United States?

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 automobiles in United States will decrease
- (b) the opportunity cost of producing crude petroleum in United States will increase
- (c) the opportunity cost of producing automobiles in United States will increase
- (d) the opportunity cost of producing crude petroleum in United States will decrease
- (e) the opportunity cost of producing automobiles in United States will not change
- (f) the opportunity cost of producing crude petroleum in United States will not change

Use the PPC tables for Japan and the United States from above to answer the question below.

5. If there is an increase in productivity within the United States that affects automobile production, then what effect will this have on the comparative advantage of the United States (i.e. relative to Japan)?

- (a) if the increase in productivity is large enough, this change in productivity could give the U.S. a comparative advantage in both goods (i.e. both automobiles and crude petroleum)
- (b) if the increase in productivity is large enough, this change in productivity could cause the U.S. to have no comparative advantage in either good (i.e. Japan would have it in both goods)
- (c) if the increase in productivity is large enough, this change in productivity could cause the comparative advantage of the U.S. to switch from crude petroleum to automobiles
- (d) if the increase in productivity is large enough, this change in productivity could cause the comparative advantage of the U.S. to switch from automobiles to crude petroleum
- (e) this change in productivity will not affect the comparative advantage of the U.S.

6. In one period, Bill can either bake 10 units of cake, or 2 units of pie. In the same time period, Ted can either bake 10 units of cake or 5 units of pie. Given this information, answer each of the following questions below.

- (a) For Bill, the opportunity cost of producing each additional unit of pie is _____ units of cake.
- (b) For Bill, the opportunity cost of producing each additional unit of cake is _____ units of pie.
- (c) For Ted, the opportunity cost of producing each additional unit of pie is _____ units of cake.
- (d) For Ted, the opportunity cost of producing each additional unit of cake is _____ units of pie.

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

| | A | B | C | D | E | F |
|------------------------------|----------|----------|----------|----------|----------|----------|
| Quantity of Automobile tires | 0 | 5 | 10 | 15 | 20 | 25 |
| Quantity of Rubber mats | 30 | 28 | 24 | 18 | 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 increasing opportunity cost
- (b) This PPC reflects decreasing opportunity cost
- (c) This PPC reflects constant 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

8. Assume that Country X has a production possibilities curve (PPC) for wheat and rye. That PPC has wheat on the vertical axis and rye on the horizontal axis (note that the location of these two goods on the graph is something to note. Assume further 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 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 unemployment affect the PPC of Country X?
- b. How does a decrease in the amount of available land within Country X affect their PPC?
- c. How does migration of laborers from Country W into Country X affect the PPC of Country X?
- d. How does increased demand for wheat within Country X (during a period of full employment) affect the PPC of Country X?
- e. How does automation (technological change) within wheat affect the PPC of Country X?
- f. How does a decrease in the availability of inputs for both wheat and rye affect the PPC of Country X?
- g. How does an increase in demand for rye, a change that occurs during a period when Country X is producing at points considered efficient, affect the PPC of Country X?
- h. How does an increase in the capital stock within Country X affect the PPC of Country X?
- i. How does a decrease in the productivity associated with producing rye 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 wheat)
- D. Movement between 2 points, down along the PPC (i.e. toward rye).
- 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 wheat
- H. Increase (pivot outward) in the PPC that affects only rye
- I. Decrease (pivot inward) in the PPC that affects only wheat
- J. Decrease (pivot inward) in the PPC that affects only rye