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Economics 202
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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 when Blackboard grades answers to any 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 to question #1 and #3 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. Note, however, that there will be at least a little flexibility in formatting (as noted in ii below), but it is your responsibility to find out how much flexibility you’ve got.

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 your answer is $\frac{6}{4}$, then you should record your answer as $\frac{3}{2}$ or 1.5, but do not write your 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 your answer is 5, then you may record your answer as 5 or 5.0, but not as 5.00.

Homework #1 Questions

1. Argentina and Brazil both produce wheat and soybeans, as per the PPC provided below.

Argentina	A	B	C	D
Quantity of Wheat	0	10	30	50
Quantity of Soybeans	250	200	100	0

Brazil	W	X	Y	Z
Quantity of Wheat	0	15	35	55
Quantity of Soybeans	22	16	8	0

- As Argentina moves from pt. B to pt. C, the opportunity cost of producing each additional unit of wheat is _____ units of soybeans.
- As Argentina moves from pt. C to pt. B, the opportunity cost of producing each additional unit of soybeans is _____ units of wheat.
- As Brazil moves from pt. X to pt. Y, the opportunity cost of producing each additional unit of wheat is _____ units of soybeans.
- As Brazil moves from pt. Y to pt. X, the opportunity cost of producing each additional unit of soybeans is _____ units of wheat.

2. Given the tables associated with 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.

- Argentina has a comparative advantage in producing wheat
- Argentina has a comparative advantage in producing soybeans
- Brazil has a comparative advantage in producing wheat
- Brazil has a comparative advantage in producing soybeans
- Neither country has a comparative advantage in producing wheat
- Neither country has a comparative advantage in producing soybeans

3. In one period, Country A can either produce 100 units of cotton, or 40 units of corn, and Country B can either produce 100 units of cotton or 20 units of corn. Given this information, answer both of the following questions below (*note: round your answers to the nearest tenth*).

Country A:

- The opportunity cost of producing each additional unit of cotton is _____ units of corn
- The opportunity cost of producing each additional unit of corn is _____ units of cotton

Country B:

- The opportunity cost of producing each additional unit of cotton is _____ units of corn.
- The opportunity cost of producing each additional unit of corn is _____ units of cotton

4. Kenya and China both produce titanium ore and steel, as per the PPC provided below.

Kenya	A	B	C	D
Quantity of Titanium ore	0	40	60	100
Quantity of Steel	50	30	20	0

China	W	X	Y	Z
Quantity of Titanium ore	0	10	30	40
Quantity of Steel	160	120	40	0

Given the tables associated with this question (above), select the **correct statement** about the comparative advantage within Kenya and China. Titanium ore is used to produce a variety of high performance parts and tools.

- (a) Kenya has a comparative advantage in producing titanium ore
- (b) Kenya has a comparative advantage in producing steel
- (c) China has a comparative advantage in producing titanium ore
- (d) China has a comparative advantage in producing steel
- (e) Neither country has a comparative advantage in producing titanium ore
- (f) Neither country has a comparative advantage in producing steel

Use the PPC tables for Kenya and China from Question #4 to answer the question below.

5. Assume that there is an increase in productivity within Kenya that affects **steel production** in that country. Indicate which of the answers below is a correct statement (i.e. select every correct response). *Note that there is no partial credit on this question – you must get this question completely correct, or your answer is incorrect.*

- (a) the opportunity cost of producing steel in Kenya will decrease
- (b) the opportunity cost of producing steel in Kenya will increase
- (c) the opportunity cost of producing titanium ore in Kenya will decrease
- (d) the opportunity cost of producing titanium ore in Kenya will increase
- (e) the opportunity cost of producing steel in Kenya will not change
- (f) the opportunity cost of producing titanium ore in Kenya will not change

Use the PPC tables for Kenya and China from Question #4 to answer the question below.

6. If there is an increase in productivity within Kenya that affects **steel production** in that country, then what effect will this change have on the comparative advantage that previously existed in Kenya (i.e. relative to China)?

- (a) if the increase in productivity is large enough, this change in productivity could cause the comparative advantage of Kenya to switch from titanium ore to steel
- (b) if the increase in productivity is large enough, this change in productivity could cause the comparative advantage of Kenya to switch from steel to titanium ore
- (c) this change in productivity will not affect the comparative advantage of Kenya
- (d) if the increase in productivity is large enough, this change in productivity could give Kenya a comparative advantage in both goods (i.e. both steel and titanium ore)
- (e) if the increase in productivity is large enough, this change in productivity could cause Kenya to have no comparative advantage in either good (i.e. China would have it in both goods)

*In the Blackboard shell for this course, there's a folder entitled "**Homework #1 material**" that's located in the Course Documents section of Blackboard. Go to that folder, get the file "Labor Productivity and Economic Growth" and use this file to answer question #7.*

7. Which of the following points does this article make labor productivity and economic growth (note that there can be 1 or more correct answers here).

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

- (a) The main determinants of labor productivity are physical capital, human capital, and technological change.
- (b) Physical capital is affected by changes in the quantity of capital, but changes in the quality of capital affect human capital, not physical capital.
- (c) The economy's aggregate production function is only affected by changes in technology.
- (d) Technological change not only includes new ways of organizing work, but also includes a combination of invention and innovation.
- (e) Increases in the quantities of physical capital, human capital and technology per person lead to a higher standard of living over time.
- (f) Increases in human capital per person can affect GDP, but not GDP per capita.

*In the Blackboard shell for this course, there's a folder entitled "**Homework #1 material**" that's located in the Course Documents section of Blackboard. Go to that folder, get the file "US Economy: Productivity Growth" by Evan Koenig and use this file to answer question #8.*

8. According to this article, what are the three main (underlying) causes of labor productivity growth which are cited in the article.

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

- (a) increases in the amount of capital per worker
- (b) increases in the quantity of available public transportation
- (c) improvements in technology and the organization of production processes
- (d) increases in income
- (e) improvements in the quality of the workforce
- (f) migration

Question #9 is on the next page.

9. Assume that the country of Ecuador has a production possibilities curve (PPC) for the production of oil and bananas, two goods where Ecuador is a major exporter on the world market. Let's assume their PPC has oil on the vertical axis and bananas on the horizontal axis.

Predict the effect of each individual event on the PPC of Ecuador by matching the event from the first list to the most likely effect (below, from the "Effect on Ecuador's PPC" list) on the next page. 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 Item):

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

Effect on Ecuador's PPC (Answer Item):

- A. Movement from a point inside this PPC to a point that's on the PPC, but no shift
- B. Movement from a point that's on this PPC to a point inside the PPC, but no shift
- C. Movement between 2 points, up along the PPC (i.e. toward oil), but no shift
- D. Movement between 2 points, down along the PPC (i.e. toward bananas), but no shift
- E. Increase (shift outward) in the PPC that affects both goods
- F. Decrease (shift inward) in the PPC that affects both goods
- G. Increase (shift outward) in the PPC that affects only oil
- H. Increase (shift outward) in the PPC that affects only bananas
- I. Decrease (shift inward) in the PPC that affects only oil
- J. Decrease (shift inward) in the PPC that affects only bananas