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Economics 202
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Homework #1 (due by 9:00pm on Monday, January 22)

*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 roommate ate 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”) and that if you do not correctly submit your work, then you will not receive credit. I.e., Blackboard has a Save button and a Save and Submit button, and you must 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. A more complete discussion of these rules is provided at Blackboard. Reading this section is strongly recommended.

Formatting matters with the answers in these questions. 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. I.e., you will not have points added to your homework score if you got answers wrong due to formatting mistakes. However, this is still something you will want to bring to Professor Haworth’s attention. *In addition, if you are not sure how to round an answer (e.g. whether 3.25 rounds to 3.2 or 3.3), then please contact Professor Haworth to get your questions answered.*

Homework Questions 1 and 3

Please note the following comments regarding formatting on Questions 1 and 3 below.

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 must simplify that answer to $\frac{3}{2}$ or record the answer as 1.5. Recording your answer as $\frac{6}{4}$ or $1 \frac{1}{2}$ would be incorrect. If you calculate a whole number answer of 4, then you may record that answer as 4 or 4.0, but do not round a number like 4.1 to 4 (i.e. leave an answer of 4.1 as 4.1).

Homework #1 Questions

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

Argentina	A	B	C	D
Quantity of Wheat	0	20	60	80
Quantity of Soybeans	240	180	60	0

Brazil	W	X	Y	Z
Quantity of Wheat	0	50	150	300
Quantity of Soybeans	120	100	60	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. Assume that Cuba and Venezuela both produce (only) oil and sugar cane, and that the opportunity cost associated with producing these goods in each country is as follows:

Cuba:

The opportunity cost of producing each additional unit of sugar cane is 0.75 units of oil

The opportunity cost of producing each additional unit of oil is 1.3 units of sugar cane

Venezuela:

The opportunity cost of producing each additional unit of sugar cane is 1.25 units of oil

The opportunity cost of producing each additional unit of oil is 0.8 units of sugar cane

Given the information above, which of the following is a correct statement:

- Cuba has a comparative advantage in producing sugar cane and Venezuela has the comparative advantage in producing oil
- Cuba has a comparative advantage in producing oil and South Africa has the comparative advantage in producing sugar cane
- Cuba has a comparative advantage in producing both sugar cane and oil
- Venezuela has a comparative advantage in producing both sugar cane and oil

Questions 3 and 4 relate to the PPC associated with Country A and Country B, where both countries produce cotton and corn. In Question 3, you will calculate the opportunity cost associated with producing each good, and then in Question 4, you will report who has the comparative advantage in producing each good (if anyone).

3. In one period, Country A can either produce 40 units of cotton, or 80 units of corn, and Country B can either produce 90 units of cotton or 80 units of corn. Given this information, answer each of the following questions below (*note: round your answers to the nearest tenth*).

Country A:

- (a) The opportunity cost of producing each additional unit of cotton is _____ units of corn
- (b) The opportunity cost of producing each additional unit of corn is _____ units of cotton

Country B:

- (c) The opportunity cost of producing each additional unit of cotton is _____ units of corn.
- (d) The opportunity cost of producing each additional unit of corn is _____ units of cotton

4. Given the information from Question 3 (above) about these two countries, select the statement which correctly assigns the comparative advantage we will observe with these countries.

- (a) Country A has a comparative advantage in producing cotton and Country B has a comparative advantage in producing corn
- (b) Country A has a comparative advantage in producing corn and Country B has a comparative advantage in producing cotton
- (c) Country A has a comparative advantage in producing cotton, but neither country has a comparative advantage in producing corn
- (d) Country A has a comparative advantage in producing corn, but neither country has a comparative advantage in producing cotton
- (e) Country B has a comparative advantage in producing cotton, but neither country has a comparative advantage in producing corn
- (f) Country B has a comparative advantage in producing corn, but neither country has a comparative advantage in producing cotton
- (g) Country A has the comparative advantage in producing both cotton and corn
- (h) Country B has the comparative advantage in producing both cotton and corn

5. As the PPC below illustrates, assume that Canada produces (only) automobiles and petroleum.

Canada	A	B	C	D
Quantity of Automobiles	0	10	30	40
Quantity of Petroleum	160	120	40	0

Assume that an increase in productivity within Canada allows this country to double their output of petroleum in each column above (i.e. 160 units of petroleum in column A becomes 320 units of petroleum, 120 units of petroleum in column B becomes 240 units of petroleum, and so on). In this situation, which of the following statements below would be correct:

- (a) the opportunity cost of producing petroleum will decrease but there will be no change in the opportunity cost of producing automobiles
- (b) the opportunity cost of producing petroleum will increase but there will be no change in the opportunity cost of producing automobiles
- (c) the opportunity cost of producing petroleum will decrease and the opportunity cost of producing automobiles will increase
- (d) the opportunity cost of producing petroleum will increase and the opportunity cost of producing automobiles will decrease
- (e) the opportunity cost of producing both petroleum and automobiles will not change

*In the Course Content section at Blackboard, there's a folder entitled Course Material, and in that folder is another folder called "**Homework #1 material**". When you go into this final folder, you'll see a file called "US Economy: Productivity Growth". Use this file to answer question #6.*

6. According to this article, what are the three main (underlying) causes of labor productivity growth which are cited in the article. *Select every correct answer below and note that there are multiple correct answers to this question.*

- (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

In the Course Content section at Blackboard, there's a folder entitled Course Material, and in that folder is another folder called "Homework #1 material". When you go into this final folder, you'll see a file called "Labor Productivity and Economic Growth". 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.

Multiple choice questions #8-16 all draw from the following information below.

Assume that the country of Mexico has a production possibilities curve (PPC) that reflects this country's production of petroleum and steel, two goods where Mexico is an exporter on the world market. Although we don't need to make this assumption, let's still just assume their PPC has petroleum on the vertical axis and steel on the horizontal axis.

In Questions #8-16 below, you must predict the effect of each individual event on the PPC of Mexico by selecting the most likely effect from the set of answer responses below each question.

8. Assume there is a significantly large decrease in the population of Mexico. How does this event affect the PPC of Mexico?
- a. No shift, but movement from a point inside this PPC to a point that's on the PPC
 - b. No shift, but movement from a point that's on this PPC to a point inside the PPC
 - c. No shift, but movement between 2 points, up along the PPC (i.e. producing more petroleum)
 - d. No shift, but movement between 2 points, down along the PPC (i.e. producing more steel)
 - e. Increase (shift outward) in the PPC that affects both goods
 - f. Decrease (shift inward) in the PPC that affects both goods
 - g. none of the above

9. Assume that there are significant improvements in the productivity associated with producing petroleum in Mexico. How does this event affect the PPC of Mexico?

- a. No shift, but movement from a point inside this PPC to a point that's on the PPC
- b. No shift, but movement from a point that's on this PPC to a point inside the PPC
- c. Increase (shift outward) in the PPC that affects both goods
- d. Decrease (shift inward) in the PPC that affects both goods
- e. Increase (shift outward) in the PPC that affects only petroleum
- f. Increase (shift outward) in the PPC that affects only steel
- g. none of the above

10. Assume that when Mexico is producing at full employment, there is an increase in the demand for steel. How does this event affect the PPC of Mexico?

- a. No shift, but movement from a point inside this PPC to a point that's on the PPC
- b. No shift, but movement from a point that's on this PPC to a point inside the PPC
- c. No shift, but movement between 2 points, up along the PPC (i.e. producing more petroleum)
- d. No shift, but movement between 2 points, down along the PPC (i.e. producing more steel)
- e. Increase (shift outward) in the PPC that affects both goods
- f. Increase (shift outward) in the PPC that affects only steel
- g. none of the above

11. Assume that there is a decrease in the unemployment associated with producing both petroleum and steel within Mexico. How does this event affect the PPC of Mexico?

- a. No shift, but movement from a point inside this PPC to a point that's on the PPC
- b. No shift, but movement from a point that's on this PPC to a point inside the PPC
- c. No shift, but movement between 2 points, up along the PPC (i.e. producing more petroleum)
- d. No shift, but movement between 2 points, down along the PPC (i.e. producing more steel)
- e. Increase (shift outward) in the PPC that affects both goods
- f. Decrease (shift inward) in the PPC that affects both goods
- g. none of the above

12. Assume technological change occurs within Mexico, and that this change positively affects the production of both petroleum and steel. How does this event affect the PPC of Mexico?

- a. No shift, but movement from a point inside this PPC to a point that's on the PPC
- b. No shift, but movement from a point that's on this PPC to a point inside the PPC
- c. No shift, but movement between 2 points, up along the PPC (i.e. producing more petroleum)
- d. No shift, but movement between 2 points, down along the PPC (i.e. producing more steel)
- e. Increase (shift outward) in the PPC that affects both goods
- f. Decrease (shift inward) in the PPC that affects both goods
- g. none of the above

13. Assume that a significant eruption of Popocatepetl, a large volcano in Mexico, causes widespread logistical problems which decrease the availability of inputs used in the production of steel. How does this event affect the PPC of Mexico?

- a. No shift, but movement from a point inside this PPC to a point that's on the PPC
- b. No shift, but movement from a point that's on this PPC to a point inside the PPC
- c. Increase (shift outward) in the PPC that affects only petroleum
- d. Increase (shift outward) in the PPC that affects only steel
- e. Decrease (shift inward) in the PPC that affects only petroleum
- f. Decrease (shift inward) in the PPC that affects only steel
- g. none of the above

14. Assume foreign direct investment from the United States increases the overall amount of available capital used to produce all goods in Mexico. How does this event affect the PPC of Mexico?

- a. No shift, but movement from a point inside this PPC to a point that's on the PPC
- b. No shift, but movement from a point that's on this PPC to a point inside the PPC
- c. No shift, but movement between 2 points, up along the PPC (i.e. producing more petroleum)
- d. No shift, but movement between 2 points, down along the PPC (i.e. producing more steel)
- e. Increase (shift outward) in the PPC that affects only petroleum
- f. Increase (shift outward) in the PPC that affects only steel
- g. none of the above

15. Assume that large streams of individuals legally migrate into Mexico from other Central American countries. How does this event affect the PPC of Mexico?

- a. No shift, but movement from a point inside this PPC to a point that's on the PPC
- b. No shift, but movement from a point that's on this PPC to a point inside the PPC
- c. No shift, but movement between 2 points, up along the PPC (i.e. producing more petroleum)
- d. No shift, but movement between 2 points, down along the PPC (i.e. producing more steel)
- e. Increase (shift outward) in the PPC that affects both goods
- f. Decrease (shift inward) in the PPC that affects both goods
- g. none of the above

16. Assume there is an increase in the unemployment associated with producing petroleum within Mexico. How does this event affect the PPC of Mexico?

- a. No shift, but movement from a point inside this PPC to a point that's on the PPC
- b. No shift, but movement from a point that's on this PPC to a point inside the PPC
- c. No shift, but movement between 2 points, up along the PPC (i.e. producing more petroleum)
- d. No shift, but movement between 2 points, down along the PPC (i.e. producing more steel)
- e. Decrease (shift inward) in the PPC that affects both goods
- f. Decrease (shift inward) in the PPC that affects only petroleum
- g. none of the above