

ECON 107

Quiz 3

This quiz will last 10 minutes.

1. (4 points) **Honor Statement:** Please read and sign the following statement:

I promise that my answers to this test are based on my own work without reference to any notes, books, or the assistance of any other person. I will also neither help others nor use a calculator or other electronic aid for calculation.

Name and Surname: _____
 Student ID: _____
 Signature: _____

2. (4 points) What do we mean when we assume our economic agents are *rational*?

Solution 1 *This means, in short, that they optimize. Or in other words given their beliefs and knowledge they try to do the best for themselves they can.*

PPF_A	PPF_B	Absolute Advantage	Produce F	MRT_A	MRT_B
$F + 2C = 42$	$\frac{1}{3}F + C = 36$	B	A	$\frac{2}{1} = 2$	$\frac{1}{\frac{1}{3}} = 3$
$F + 2C = 42$	$\frac{1}{3}F + C = 12$	A	A	$\frac{2}{1} = 2$	$\frac{1}{\frac{1}{3}} = 3$
$\frac{1}{3}F + C = 12$	$F + 2C = 42$	B	B	$\frac{1}{\frac{1}{3}} = 3$	$\frac{\frac{2}{3}}{1} = 2$
$\frac{1}{3}F + C = 36$	$F + 2C = 42$	A	B	$\frac{1}{\frac{1}{3}} = 3$	$\frac{2}{1} = 2$

3. (9 points total) Country A has the production possibilities frontier:

$$\alpha F + \beta C = X$$

where F is food and C is clothing. Country B has the production possibilities frontier:

$$\mu F + \tau C = Y$$

- (a) (3 points) Which country has an *absolute advantage* over the other one and why?

Solution 2 *Either one will find $X/\alpha > Y/\mu$ and $X/\beta > Y/\tau$ or the reverse. If it is the former then A has an absolute advantage, otherwise B .*

- (b) (3 points) Does this mean that these two countries will not be able to trade with each other? Why or why not? Use of the correct technical term will be worth a point.

Solution 3 *No, what matters for trade is comparative advantage or the slope of the PPF. As long as this slope—the rate of tradeoff between the two goods—is not the same for the two countries trade can be beneficial.*

- (c) (3 points) Which of these two countries should specialize in producing food? (I.e. produce food for export.) Explain

Solution 4 *The question is which one has to give up more C to produce F , or the MRT (marginal rate of transformation) which is:*

$$MRT = \frac{\frac{\partial PPF}{\partial C}}{\frac{\partial PPF}{\partial F}}$$

though with linear production sets there are other ways to find it. Since F is in the denominator, the lower this value the better, and thus the country which has $MRT = 2$ should produce food. One could also derive this by considering how much F you would get if you reduce C by one.

4. (3 points) Standard feedback questions:

Remark 5 *These should be graded participate or not, i.e. if they write down an answer it should get full credit.*

- (a) Out of ten, my level of comprehension of the material covered this week is:
- (b) My favorite topic of the week was:
- (c) The topic I understood the least this week was: