ECO 101A: TUTORIAL # 1

Date: 17-01-2017

Q1. Suppose that only two goods are produced in an economy, namely good X and good Y, and that these two goods have the production functions:

$$Q_x = 5\ L_x$$

$$Q_y = 10\ L_y$$

as in the above examples, and further suppose that total labor = L = 50

(a) How can we draw a graph of the Production Possibility frontier or the PPF? Derive the equation of the resulting PPF and draw it.
(b) What is the opportunity cost of good X?

Q2. In a hypothetical economy six production possibilities are available.

Prod. possibilities	A	B	C	D	E	F
Quantity of Good X : Q_x	0	1	2	3	4	5
Quantity of Good Y : Q_y	15	14	12	9	5	0
MRT						
Opportunity cost						

(a) Fill the rest of the table.

(b) Suppose the country is currently producing 2 units of X and 10 units of Y. How many additional Y could they produce without giving up any X?

(c) Suppose the production possibilities frontier given in the above table shows the available trade-offs between consumption goods (Y) and capital goods (X). Suppose two countries *Eternia* and *Middle-earth* face this identical production possibilities frontier. Suppose *Middle-earth* chooses to produce at point B while *Eternia* choose to produce at point D. Which country will experience more growth in the future? Why?

(d) In this model, what is the opportunity cost of future growth?

(e) Demonstrate the impact of growth on a production possibilities frontier.

(f) Show the shift in the PPF if there was an increase in technology that only affected the production of capital goods X.

(g) What will be the impact of improvement in technology of capital good X while deterioration of technology of consumption good Y simultaneously, on the PPF?