

Practice Questions

1. Suppose the production function in Ghana is given by

$$Y = AK^\alpha L^{1-\alpha}$$

and $\alpha = 0.3$.

- (a) Show that ceteris paribus, a 10% increase in the labor force leads to about a 6.9% increase in GDP.
- (b) Show that ceteris paribus, a 10% increase in the capital stock leads to about a 2% increase in GDP.
- (c) Show that ceteris paribus, a 10% increase in TFP leads to a 10% increase in GDP.
- (d) What do you conclude from your answers to (a), (b), and (c)?

2. Suppose the production function in Thailand is given by

$$Y = AK^\alpha L^{1-\alpha}$$

and $\alpha = 0.3$.

- (a) Ceteris paribus, suppose L went up from 1 to 2. By how much does Y go up by?
- (b) Ceteris paribus, suppose L went up from 2 to 3. By how much does Y go up by?
- (c) Ceteris paribus, suppose L went up from 3 to 4. By how much does Y go up by?
- (d) What do you conclude from your answers to (a), (b), and (c)? Also plot Y against L holding A and K fixed.

3. An economy has the production function

$$Y = 0.2(K + \sqrt{N})$$

In the current period, $K = 100$ and $N = 100$.

- (a) Graph the relationship between Y and K holding L fixed at its current value. What is the MPK? Does MPK diminish?
- (b) Graph the relationship between Y and L holding K fixed at its current value. Find the MPN when L goes up from 100 to 110. Compare this result with the MPN for an increase in L from 110 to 120. Does MPN diminish?