

Homework 4
Econ 361
Intermediate Microeconomic Analysis
Spring 2012
30 points

1. (5 points) If an input exhibits diminishing marginal returns does this mean that as the quantity of the input is increased, the quantity of output falls?
2. (5 points) Holding all other inputs constant, if the marginal product of labor is falling, must the average product of labor also be falling?
3. (5 points) In production with one variable input, is the steepest point of the total product curve the point of highest average product?
4. (15 points) For each of the following examples, draw a representative isoquant. What can you say about the marginal rate of technical substitution in each case?
 - a. A firm requires exactly three workers to operate each piece of machinery in the factory.
 - b. A firm can always trade one workers for two robots and hold output constant.
 - c. A firm can hire only college students to produce its output, or it can hire some combination of college and high school student employees. For each college student employee let go, the firm must hire an increasing number of high school employees to maintain the same level of output.