Intermediate Microeconomics
ECNS 301
Fall 2015

Homework #: 6

Due by the beginning of class on: Thursday November 19, 2015

Name: 

Instructions:
There are 3 questions worth a total of 100 points. Answer each question clearly and concisely. You must show your work to receive credit. You are allowed to work with others, but all work must be your own.

Clearly print your name above and in the space provided on the next page. You must turn in both sides of this cover sheet along with your responses. You do not need to turn in the questions, only your responses with the cover sheet. All pages must be stapled to be graded.
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Firms and Production

1. Give careful reasons for your answer to the following. (30)
   (a) Why do economists assume that marginal product is often initially increasing?
   (b) Why do they assume that marginal product eventually falls?
   (c) When marginal product is falling what is happening to average product?

Production & Costs

2. A firm can use either high skilled or low skilled workers in production. One high skilled
   worker can produce as much as 2 low skilled workers: they are substitutes.
   Unions represent high skilled workers. They are only concerned about the level of em-
   ployment and wages for high skilled workers. The wage for high skilled workers is $10.
   Low skilled workers are not represented by the union, and their wage is $4. The govern-
   ment is considering introducing a minimum wage of $5.01.
   What will be the union’s position on the minimum wage increase and why?

3. Jane Eyre runs a medical clinic. Her production function is $Q = KL$ where $Q$ is the
   number of patients treated, and $K$ and $L$ are inputs. $K$ is the number of nurses and $L$
   is the number of doctors. The price of $K$ is 1 and the price of $L$ is 5.
   (a) Suppose Jane currently employs 1 doctor ($L = 1$). If she is operating at a point
       on her long run average cost curve, how many nurses does she hire? (Hint: on her
       long run average cost the choice of $L$ is optimal) How many patients does she treat
       (what is $Q$)? What are her total and average costs?
   (b) Suppose Jane expands output to 80 patients. In the short run, if $L$ is fixed at one
       unit and $K$ is variable, how much $K$ will Jane use? What will be her total and
       average costs in the short run?
   (c) Jane expands output to 80 patients. In the long run, how much $K$ and $L$ will Jane
       use? ($L$ is now variable.) What will be her total and average costs for 80 patients?
   (d) Plot 2 points on Jane’s long run average cost curve. Plot 2 points on her short run
       average cost curve based on $L = 1$. (Hint: You only need to plot three points here
       because one point is on both curves. Use your answers to Parts a-c.)