

Do not write your name on the assignment. Write your name only on the back of this sheet of paper and staple your answers on the front of this sheet of paper. Failure to follow these directions will cost you 1 point on the assignment.

- 1) (30 points) Draw the isoquant/isocost diagram for a firm. Illustrate an increase in the rental rate of capital. Explain why the curve(s) moved as drawn and how you got the original and new levels of capital and labor.
- 2) (15 points) Explain the economic reason, not the mathematical reason, why $MP_L/w = MP_K/r$.
- 3) (30 points) Use an isocost/isoquant diagram to determine if the firm is facing increasing, decreasing, or constant returns to scale. Explain why the curve(s) moved as drawn and how you determined which type of returns to scale it is.
- 4) (25 points) Draw the isoquants for the situation where capital and labor are perfect substitutes. Explain why the curves take that shape.