

Place your name on the back of this sheet of paper and nowhere else. Staple your answers face up on the front of this sheet of paper. Failure to follow these directions will cost you 1 point. Your assignment will be typed, except graphs can be drawn by hand and mathematical equations can be done by hand. Failure to type it will cost you 10 points. If you use double-sided printing or print on the back of scrap paper, I will give you one additional point.

1) (35 points) Draw two isocost curves which have the wage rate twice the rental rate. Explain how you know your graph is correct. Illustrate the effects on those two lines of an increase in the rental rate of capital. Explain why the curves moved as drawn. Add appropriate isoquants to find the expansion path before the rate increase and after the rate increase. Why did the line move as drawn?

2) (35 points) Draw isocost lines which correspond to the following information. The wage rate is \$5/hour and the rental rate is \$4/hour. The total costs for the three lines are \$20, \$40, and \$60. Find the expansion path by adding appropriate isoquants. For the last two points on the path, is the company facing increasing returns to scale, constant returns to scale, or decreasing returns to scale? Explain your logic and show all work.

3) (15 points) What is the equi-marginal principle for production? Explain why it makes sense.

4) (15 points) What is the slope of the isoquant? Explain why that makes sense.