

Place your name on the back of this sheet of paper and nowhere else. Staple your answers 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) (15 points) What is the slope of an isoquant? Prove your equation makes sense.
- 2) (40 points) Draw both the TPL diagram and the APL/MPL diagram. Illustrate the effect of an improvement in technology. Explain why the curves moved as drawn.
- 3) (20 points) Draw four isoquant lines for a product which uses two units of labor for every unit of capital in fixed proportions. Explain why the isoquants take their shapes.
- 4) (25 points) Draw four isoquant lines for a product which capital and labor are perfect substitutes. Explain why the lines take their shape. Obviously, we have not added the other line on the graph called the iso-cost line. Without knowing anything about that line, we can figure out the K/L ratio. Explain how we can figure it out knowing the shape of the graph, the wage rate, and the rental rate for capital.