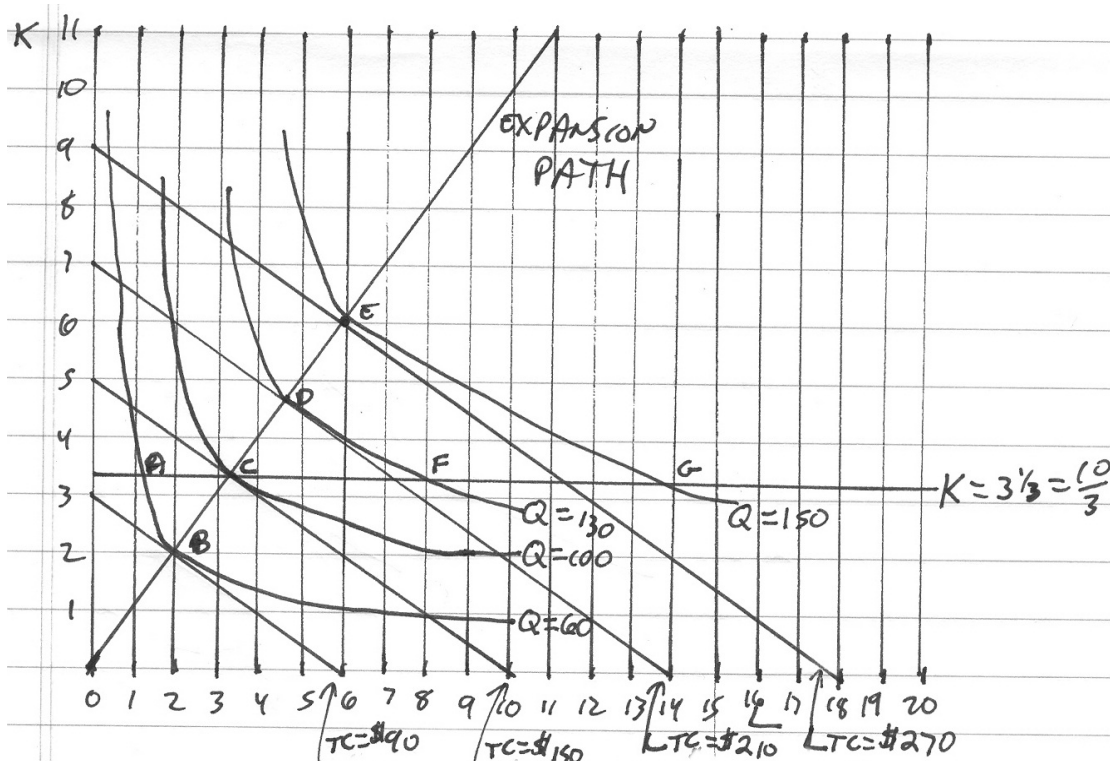


Write your name on the cover of the test booklet and nowhere else. Enclose this sheet with the booklet. Failure to follow these directions will cost you 1 point. The test has 100 points (to be scaled up to 170 points) and is scheduled to take 50 minutes. Therefore, expect to spend 1 minute for every 2 points. For example, a 12-point question should take 6 minutes. I cannot give extra time because some students have a class after your class.

- 1) (8 points) Answer EITHER Part A OR Part B.
 - A) What is the slope of the iso-cost line? Prove it.
 - B) Is electricity a fixed cost, variable cost, or both? Briefly explain your logic.

2) (10 points each) Answer THREE of the following questions using the graph to the right. **Explain what you did and show all calculations.**

- A) What are the wage and rental rates?
- B) Find the SRTC for TWO of the quantities. Which two lettered points are you referring to?
- C) Find the LRATC for TWO of the quantities. Which two lettered points are you referring to?
- D) Using points C and D, does this graph show increasing returns to scale, constant returns to scale, or decreasing returns to scale?



3) (18 points) Answer EITHER Part A OR Part B.

- A) Draw the MRP_L/MRC_L diagram. Draw an increase in demand for the product. Explain why the curve(s) moved as drawn. What happens to the number of employees and the wage they are paid?
- B) Draw the TP_L diagram and explain why it takes its shape.

4) (18 points) Answer EITHER Part A OR Part B.

- A) Suppose the fixed costs are \$120, the marginal costs are $\$5/Q$, and the price is $\$9/Q$. Draw the straight-line TC/TR diagram. Find the break-even point. If the firm is producing 40 units, then calculate the DOL. How much would their profits drop if their sales dropped 20%? Show all work and briefly explain all calculations.
- B) Draw the straight-line TC/TR diagram for two firms which are making the same profits, but have different degree of operating leverage. Explain how you know which one has a higher DOL and how you know they have the same profits. You do NOT need to use precise numbers.

5) (26 points) Draw EITHER the event in Part A OR the event in Part B on the AVC/ATC/AFC/MC diagram. Explain why the curve(s) moved as drawn.

- A) The CEO gets a pay raise.
- B) A wooden furniture manufacturer finds that the price of wood increases.