

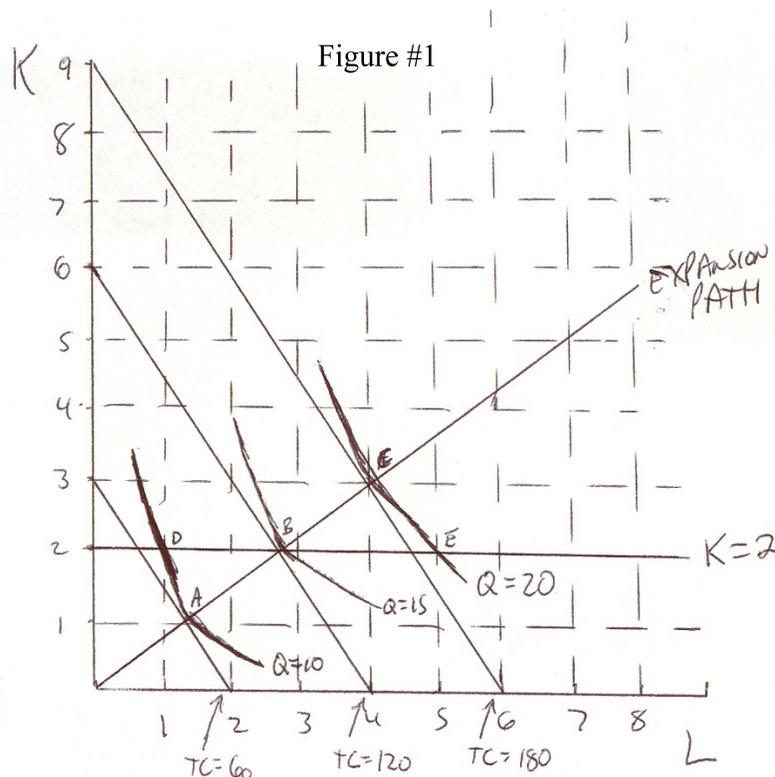
Write your name on the cover of the test booklet and nowhere else. Enclose this sheet with the booklet. Failure to follow these directions will cost you 1 point. The test has 100 points (to be scaled up to 170 points) and is scheduled to take 50 minutes. Therefore, expect to spend 1 minute for every 2 points. For example, a 10-point question should take 5 minutes. I cannot give extra time because some students have a class after your class.

1) (10 points) Answer EITHER Part A OR Part B OR Part C. (Only do ONE of the three parts.)

A) In Figure #1, what is the wage rate and what is the rental rate of capital? Show all work and explain what you did.

B) In Figure #1, how much capital and labor would you use to produce 10 units in the long run? Show all work and explain your logic.

C) Use Figure #1 to determine if between points B and C the firm has increasing returns to scale (IRTS), constant returns to scale (CRTS), or decreasing returns to scale (DRTS). Explain your logic and show all work.



2) (12 points) Answer EITHER Part A OR Part B.

A) Is the LRATC curve the envelope of the SRATC curves? Why or why not? Is the LRMC curve the envelope of the SRMC curves? Why or why not?

B) Draw the *learning curve*. Explain why it takes its shape.

3) (22 points) Answer EITHER Part A OR Part B.

A) Draw the  $MRP_L/MRC_L$  diagram. Illustrate an increase in the selling price of the good. Explain why the curve(s) moved as drawn. What happens to the wage paid and quantity of people hired?

B) Suppose a firm sells its product for \$5/unit, has marginal costs of \$3/unit, and fixed costs of \$500. Calculate its break-even point and draw the TR/TC diagram for the break-even analysis. If the firm is selling 1200 items, then what is its DOL? Show all work and briefly explain your logic.

4) (28 points) Answer EITHER Part A OR Part B.

A) Draw the AVC/ATC/AFC/MC diagram. Illustrate on it an increase in the cost of raw materials. Explain why the curve(s) moved as drawn.

B) Draw the AVC/ATC/AFC/MC diagram. Illustrate on it an increase in the cost of rental rate of capital. Explain why the curve(s) moved as drawn.

5) (28 points) Use Figure #1 to derive EITHER the LRATC curve OR the SRTC cost curve. Show all work. Briefly describe what you did. Make sure you have at least three points on the curve and plot it.