

Problem Set #4

PPA 723

Professor John McPeak

Due _____

Name _____

1) What causes diminishing marginal returns in a production function?

2) How long is the long run?

3) Fill in missing information in the following table.

Labor units	Total Output	Marginal product	Average product
0	0	NA	NA
1		4	
2	16		
3			11
4	52		
5	69		
6	85		
7		15	
8			14

Draw the implied curves.

4) For a given isoquant, if the marginal product of capital is 0.5 and capital increases by 2 and the corresponding decrease in labor is 1, what is the marginal product of labor?

5) Fill in the missing information in the following table.

Labor	Total Product	Marginal Product	Average Product
0		NA	0
1	140		
2		120	
3	370		
4			115

6) My current level of production is 7 units. If I double my input bundle and my output level becomes 14 units, do I have increasing, constant, or decreasing returns to scale in production? Why?

7) Isoquants:

a. Draw an isoquant for which the two inputs (capital and labor if you need ideas, but you can be creative) are easily substitutable. Tell me a story about the product being produced that explains the shape of your isoquant using real world issues.

b. Draw an isoquant for which the two inputs (capital and labor if you need ideas, but you can be creative here too) are not easily substitutable. Tell me a story about the product being produced that explains the shape of your isoquant using real world issues.