

Discussion 7

Important Topics

- Profits and Economic Costs
- Graphing TPL, MPL, APL
- Firm Choice of Technology
- Cost Curves

Profits and Economic Costs

Exercise 1 Sam decides to start a business selling candies to college students. To get into this business, he needs to rent a store on the University Avenue with rent \$500. In addition, he needs to hire a helper and pay her \$400. If Sam choose not to open up the candy store, he could have worked in a chocolate factory and earn a salary of \$1000. The demand curve of college students (per month) is given by $P = 10 - 0.01Q$. Each candy costs \$2 from the supplier.

- If Sam sets price at $P = \$6$, what is his profit? What is his economic profit?
- What price should Sam choose to maximize revenue and what is his profit at that price? Is profit maximized at this price? (Hint: price elasticity of demand)

Graphing TPL, MPL, APL

Exercise 2 The Old Fashioned has the following relationship between the number of chefs in the kitchen and the number of dishes they can cook:

# of Chefs	# of dishes	MPL	APL
0	0	-	-
1		10	
2			12
3		6	
4	32		
5			5

- (a) Complete the columns Marginal Productivity of Labor (MPL) and Average Productivity of Labor (APL).
- (b) Draw Total Productivity of Labor (TPL) in graph 1. Draw MPL and APL in figure 2.

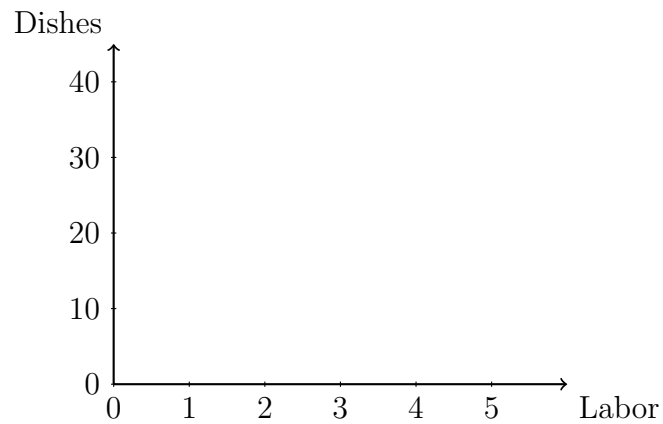


Figure 1: Graphing TPL

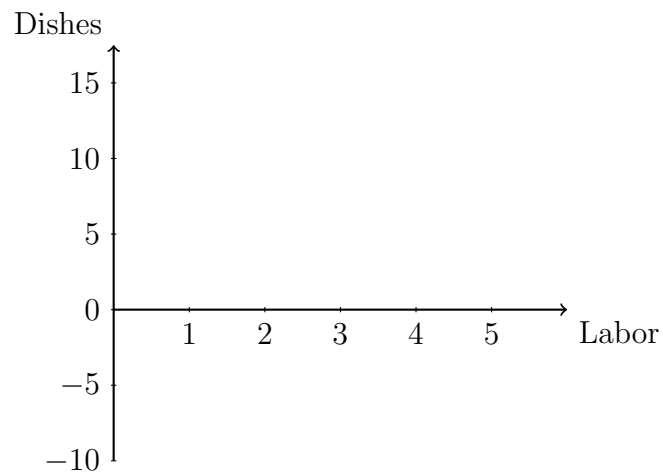


Figure 2: Graphing MPL and APL

Firm Choice of Technology

Exercise 3 Suppose Babcock Dairy Factory has the following three technologies available in producing banana milk. All three combine labor and capital price in fixed proportion as displayed in table 1.

Technology	Labor	Capital
A	4	3
B	2	5
C	4	4

Table 1: Input Requirement for Milk Per Gallon

- (a) Is there a technology that will never be used?
- (b) If the unit price of labor is \$3, the unit price of capital is \$4, which technology would be used?
- (c) If the unit price of labor is \$4, the unit price of capital is \$2, which technology would be used?