

Group Practice: The Perfect-Size Business

Student Name: _____ Date: _____

Directions: Read the following description of skateboard maker Comet Skateboard's business operation. Using the provided formulas for calculating key business economic measurements represented in the chart below, fill in all of the blank cells. Then respond to the questions on the next page.

Marginal product = the change in the total product brought about by the addition of an extra worker

Example in chart below: The addition of the first worker changed total product by 14 (0 workers = 0 units of the product produced; 1 worker = 14 units of the product produced)

Total Cost = Fixed Costs + Variable Costs

Marginal cost = the change in total cost divided by the change in total product

Example in chart below: The addition of the third worker changed total cost by 125 (2 workers = 425; 3 workers = 550). At the same time, total product with 2 workers was 31, total product with 3 workers was 60 (60-31 = 29). So $125/29 = 4$.

Don Shaffer, Chief Operations Officer of Comet Skateboards, knew an opportunity when he saw it. With more and more riders demanding lower-priced but environmentally sustainable boards, he knew that the industry needed a new product. He jumped, introducing the company's newest line of skateboards made of inexpensive and environmentally friendly bamboo. The boards sold for \$22 apiece and were an instant hit. However, it took the company a while to determine how many new workers it needed to hire to maximize its profitability in the new venture.

Production Schedule				Costs				Revenues		Profit
Marginal Returns	Workers	Total Product	Marginal Product	Fixed Cost	Variable Costs	Total Cost	Marginal Cost	Revenue	Marginal Revenue	Profit
	0	0	0	175	0	175	0	0		-175
	1	14	14	175	125		9	238	17	
	2	31		175	250			527	17	
	3	60	29	175	375	550	4	1,020	17	
	4	97		175	500			1,649	17	
	5	141		175	625			2,397	17	
	6	171		175	750		4	2,907	17	
	7	191	20	175	875	1,050		3,247	17	
	8	200		175	1,000			3,400	17	
	9	204		175	1,125			3,468	17	
	10	205		175	1,250			3,485	17	
	11	195	-10	175	1,375			3,315	-17	
	12	172		175	1,500	1,675	-5	2,924	-17	

Questions

1. How many workers does Comet need to start making money on these new bamboo boards?
2. How many employees should Comet employ on this production? Why?
3. Why would Comet stop increasing production even though its revenues would continue to climb?
4. Up to what point does Comet's production show increasing marginal returns? At what point does it show negative marginal returns?