

Week #6 Worksheet – Explicit Cost ~ ATC, AVC, and AFC

Exercise 6.1: Fill in the marginal and average product columns. According to the chart, the point of diminishing returns occurs when?

# Workers	Total Product	Marginal Product	Average Product
0	0	--	--
1	5	5	5
2	14		
3	30		
4	44		
5	50		

Exercise 6.2: Suppose that Joan's has done its accounting work, and has come up with these figures for what it costs Joan's Home Care to maintain various numbers of patients for a year. Based on the information below, fill in the fixed cost, variable cost and marginal cost columns.

# of Patients	Total Cost	Fixed Cost	Variable Cost	Marginal Cost
0	\$1000			
1	\$4500			
2	\$7500			
3	\$10000			
4	\$12000			
5	\$14500			

Exercise 6.3: Complete the cost sheet below using the information already filled in:

Quantity	TC	FC	VC	MC	AC	AVC	AFC
0	100	100	0	--	--	--	--
1	139			39		39	100
2		100	68		84	34	50
3		100	107		69		
4	256	100		49		39	25
5		100	235	79	67	47	20

- 1) Calvin leaves his \$25,000/year job as a graphic artist for an advertising firm to become a self-employed cartoonist. He makes money as a cartoonist by selling his strips to newspapers. To start up his company, he uses \$10,000 out of his savings account that earned 5% interest. The cost of his supplies, in addition to the \$10,000 he used to start the company, was \$50,000.

What is his accounting cost?

What is his economic cost?

- 2) Diminishing marginal returns for the first four units of a variable input is exhibited by the total product sequence:
- 50, 50, 50, 50
 - 50, 40, 30, 20
 - 50, 110, 180, 260
 - 50, 100, 150, 200
 - 50, 90, 120, 140

- 3) Suppose the first four units of a variable input generates corresponding total outputs of 200, 350, 450, 500. The marginal product of the third unit of input is:
- 50
 - 100
 - 150
 - 200
 - 350
- 4) Davey produces 100 glasses of lemonade with average total cost of 50 cents per glass and average variable cost of 40 cents per glass. What is Davey's total fixed cost?
- \$40.00
 - \$50.00
 - \$12.00
 - \$0.10
 - \$10.00
- 5) A plant producing T-shirts finds that output will vary with the number of workers employed per week in the following way:

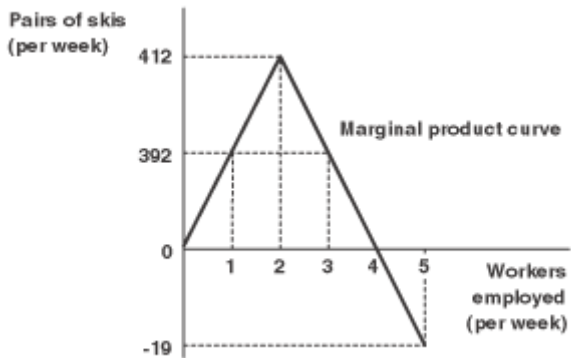
Number of workers employed per week	Output (T-shirts per week)
1	14
2	36
3	66
4	92
5	110
6	120
7	125
8	125

The point of diminishing returns is reached just after

- 1 worker is employed.
 - 5 workers are employed.
 - 3 workers are employed.
 - 2 workers are employed.
 - 4 workers are employed.
- 6) The point of diminishing returns occurs when
- the total product curve is at its maximum.
 - the marginal product curve is at its minimum.
 - the marginal cost curve is at its minimum.
 - the average product curve is at its maximum.
- 7) At current levels of operation, the marginal product of labor in a factory exceeds the average product of workers. If another worker is employed,
- the average product of labor will decrease.
 - there will be no change in the average product of labor.
 - there will be no change in the marginal product of labor.
 - the average product of labor will increase.

- 8) A firm's total variable cost increases from \$4,000 to \$4,020 as the firm increases its output from 400 to 401 units. What is the marginal cost of the additional unit of output?
- a) \$4,020
 - b) \$4,000
 - c) Cannot be determined from the information given.
 - d) \$20
 - e) \$401

9)



The figure above shows the marginal product of labor curve for a ski manufacturer. Assuming 2 workers are hired, what is the average weekly product of labor?

- a) 202 pairs of skis.
- b) 804 pairs of skis.
- c) 402 pairs of skis.
- d) 412 pairs of skis.