

Principles of Microeconomics  
Practice Problems for Production and Costs  
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**Problem:**

Suppose a farmer has 15 acres of land that he rents for \$12 per acre. Suppose he pays his laborers \$5 each. He has the following production function:

L	Q
0	0
6	1
11	2
15	3
21	4
31	5
45	6
63	7

Complete the following table for the farmer:

L	Q	$AP_L$	$MP_L$	FC	VC	TC	MC	AFC	AVC	ATC
		$Q/L$	$\Delta Q/\Delta L$				$\Delta TC/\Delta Q$	FC/Q	VC/Q	TC/Q
0	0	—	—				—	—	—	—
6	1									
11	2									
15	3									
21	4									
31	5									
45	6									
63	7									

**Answer:**

L	Q	$AP_L$	$MP_L$	FC	VC	TC	MC	AFC	AVC	ATC
		$Q/L$	$\Delta Q/\Delta L$				$\Delta TC/\Delta Q$	FC/Q	VC/Q	TC/Q
0	0	—	—	\$180	\$0	\$180	—	—	—	—
6	1	1/6	1/6	\$180	\$30	\$210	\$30	\$180	\$30	\$210
11	2	2/11	1/5	\$180	\$55	\$235	\$25	\$90	\$27.5	\$117.5
15	3	3/15	1/4	\$180	\$75	\$255	\$20	\$60	\$25	\$85
21	4	4/21	1/6	\$180	\$105	\$285	\$30	\$45	\$26.25	\$71.25
31	5	5/31	1/10	\$180	\$155	\$335	\$50	\$36	\$31	\$67
45	6	6/45	1/14	\$180	\$225	\$405	\$70	\$30	\$37.5	\$67.5
63	7	7/63	1/18	\$180	\$315	\$495	\$90	\$25.7	\$45	\$70.7