

Homework 4. Short-Run Supply

Econ 101 Professor Guse

1. Lena's Llamas makes fine wool (H) using land (A) and labor (L). If Lena rents 10 acres of land, her output will be given according to the following schedule. Suppose the price of wool is \$10 per pound and wages are \$30 per hour. Land rents for \$10 per acre.

Labor (Hours)	Output (Pounds)
0	0
1	5
2	12
3	20
4	28
5	35
6	40
7	44
8	48
9	50
10	51
11	51

- (a) Sketch the total product curve associated with 10 acres of land.
- (b) Sketch the marginal product and average product curves associated with 10 acres of land.
- (c) Ole says to Lena after she rents the ten acres, "I betcha hire at least five hours labor for this operation or none at all". Would you take Ole's bet. Explain. (Hint answer this question last and then explain why you could have answered it at this point in your analysis.)
- (d) Sketch Lena's short-run total cost curve.
- (e) Sketch Lena's short-run marginal cost curve.
- (f) Sketch Lena's average variable cost curve.
- (g) If wool sells for \$8 per pound, how much wool will Lena make and what will her profit be? (Assume that she must hire labor in whole hours.)
- (h) How high does the price of wool need to be to make it worth-while for Lena to produce any wool?