

Name \_\_\_\_\_

## Operating a Firm in a Purely Competitive Market

EC303

You should calculate your answers "the old fashioned way." Check your answers using the Excel module on "Profits and Losses in Short-Run Pure Competition at (<http://www.boisestate.edu/econ/lreynol/web/Spreadsheets/Profit-PureComp.xls>)

Given the cost function,  $TC = 250 + 142Q - 3.4Q^2 + .03Q^3$

1. What is the output that results in the least cost per unit?  $Q_{LC} =$  \_\_\_\_\_

2. What is the least cost per unit at the output level calculated in question 1?

$AC_{LC} =$  \_\_\_\_\_

3. What is the output level that maximizes the "efficiency" or average product of the variable input?

$Q_{eff} =$  \_\_\_\_\_

4. At a price of \$62 what is the output that will maximize the profits of the firm?

$Q_{\Pi_{max}} =$  \_\_\_\_\_

5. What are the maximum profits?

$\Pi_{max} =$  \_\_\_\_\_

6. What are the Break-Even points for the firm?

$Q_1 =$  \_\_\_\_\_

$Q_2 =$  \_\_\_\_\_

7. At what market price will the firm "shutdown" in the short run?

$P_{sd} =$  \_\_\_\_\_