SUNY-Binghamton Economics 160, Principles of Microeconomics, Christopher Hanes
Problem on costs of production

Your name: _____

TA name, section day & time: _____

The Excel spreadsheet describes a business, "Herb's Fish Fry." This business sells fried fish dinners from food trucks. The only form of capital used by the business is trucks. The only variable factor is labor. (Forget about the cost of the fish.) The top portion of the spreadsheet describes what happens if the business uses 5 trucks; the bottom portion describes what happens if the business uses 6 trucks. Trucks cost $1000 a month. Each worker costs $800 a month.

The spreadsheet is similar to Table 2 in Mankiw chapter 13. The first column gives the quantity of fish dinners produced (in thousands). The second column gives the number of workers needed to fry up and serve that many dinners. Note that if the business has more trucks, it can produce the same number of dinners with fewer workers. The remaining columns give costs and average costs, per month. The third column gives fixed cost, that is the cost of the trucks. Thus, in the top portion of the spreadsheet fixed cost is $5000; in the lower portion fixed cost is $6000.

1) Write formulas to fill in all the remaining columns of the spreadsheet. For example, to fill in column 4, write a formula that gives total variable cost - that is, the total cost of labor - as equal to the number of workers times $800. Do this for the top portion of the spreadsheet and also the bottom portion. *Print out the top portion of the spreadsheet (describing production with 5 trucks). Separately, print out the bottom portion (describing production with 6 trucks).*

2) Look at the relation between marginal cost and average total cost. See that ATC is falling when MC is less than ATC; see that ATC is rising when MC is more than ATC.

3) Using the numbers for 5 trucks, make a graph like Figure 4 in Chapter 13, using Excel. *Print out the graph.*

4) What is the "efficient scale" quantity of production if the business has 5 trucks?   _____

   What is the "efficient scale" quantity of production if the business has 6 trucks?   _____

5) Does Herb's Fish Fry have economics or scale, diseconomies of scale, or constant returns to scale?

                    _____

To turn in this assignment, staple to this page the two printed-out spreadsheets from 1) and the graph from 2).