

ECO 610  
 Problem Set #3  
 Fall 2020

1. (8 pts.) Your niece, who dropped out of college and currently delivers sandwiches for Jimmy John's (earning \$24,000 per year), approaches you for business advice. She has the opportunity to buy a craft brewery from a friend who wants to quit being the owner/manager, sell out, and go get an MBA so she can earn the big bucks. Annual sales revenues for the brewery are \$240,000, and annual accounting costs are:

Ingredients (grains, hops, yeast, bottles, etc.)	\$50,000
Leased brewing and bottling equipment	\$45,000
Licenses, utilities, taxes	\$36,000
Hourly workers	\$60,000
Advertising	\$15,000

The sale of the brewery would include the building and land where the brewery is located, the brand name trademark and associated goodwill, and the customer list. The asking price is \$100,000, which your niece would take out of her investment account where it has been averaging a 7% return. What is your advice? Hint: This is not a one-word answer. You should help her calculate the economic profitability of this venture.

2. (12 pts.) A firm produces output (Q) using inputs labor (L) and capital (K). It can select from three different plant sizes corresponding to  $K=3, 6,$  and  $9$ . When different amounts of L are combined with a fixed amount of K, output varies as follows:

K	3	3	3	6	6	6	9	9	9
L	4	6	12	6	8	17	9	12	21
Q	6	9	12	12	17	21	15	21	25

- (a) If the per unit price of labor is \$10 and the per unit price of capital is also \$10, draw the SRAFC, SRAVC, and SRATC curves corresponding to  $K=3$  and  $K=9$ . Show your calculations in a table and carefully label each point in your diagram.
- (b) In a separate diagram, illustrate SRATC curves corresponding to  $K=3, K=6,$  and  $K=9$ , and then sketch the LRAC curve for this firm and explain whether it experiences economies or diseconomies of scale.

Section 201/203 Teams:

1. M. Appleton, K. Wiard, J. Franks
2. N. Burr, C. Workman, T. Murphy
3. R. Flickinger, K. Suzuki, L. Gray
4. T. Greene, R. Syed, M. Hurst
5. M. Lattin, M. Oertal, D. McQuaid
6. C. Shepherd, K. Stenzel, C. Dobson
7. L. Smart, J. Lenoir, T. Bradford
8. B. Stevens, J. MacLeod, L. Fowler
9. M. Ticar, K. Midelfort, B. Sturgill
10. Y. Xia, L. Adedokun, R. Tandon
11. K. Bradford, K. Silver

Section 202/204 Teams:

1. K. Rowe, E. Hammons, C. Swartout
2. B. Billiter, M. Koutourousiou, J. Thomas
3. T. Williamson, E. LaFavers, JD Heck
4. J. Rolf, K. Moore, A. Kilgore
5. J. Donahue, C. Smith, R. Mahan
6. T. Gatewood, I. Almagdub, K. Obeng
7. K. Fugate, M. Anderson, M. Paranzino
8. K. Meyer, R. Saunders
9. S. Patel, S. Reiner, T. Stapleton
10. P. Almeter, H. Ganesh, J. Wells
11. M. Mastalerz, A. Smith, J. White
12. J. St. James, T. Thompson, K. Stafford
13. A. Terry, M. Alonso, K. Starns

