

Write your name on the cover of the test booklet and nowhere else. Enclose this sheet with the booklet. Failure to follow these directions will cost you 1 point. The test has 100 points (to be scaled up to 170 points) and is scheduled to take 50 minutes. Therefore, expect to spend 1 minute for every 2 points. For example, a 12-point question should take 6 minutes. I cannot give extra time because some students have a class after your class.

Regression Statistics						
Multiple R		0.82305				
R Square		0.677412				
Adjusted R Square		0.666192				
Standard Error		806.8242				
Observations		120				
Analysis of Variance						
	<i>df</i>	<i>Sum of Squares</i>	<i>Mean Square</i>	<i>F</i>	<i>Significance F</i>	
Regression	4	1.57e+08	39300721	60.37299	2.23e-27	
Residual	115	74861005	650965.3			
Total	119	2.32e+08				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Statistic</i>	<i>P-value</i>	<i>Lower 95.00</i>	<i>Upper 95.00</i>
Intercept	1111.000	137.570	8.076	6.13e-13	838.663	1383.662
Porange	-642.000	132.470	-4.846	0.000004	-904.848	-380.054
Pcar	0.067	0.032	1.857	0.056392	0.004	0.129
Pdog	5.000	0.585	8.550	1.30e-14	3.986	6.303
Income	0.001	0.008	0.120	0.996993	-0.016	0.017

1) (14 points each) Use the regression results above to answer TWO of the questions below. The regression was trying to predict the quantity of oranges sold.

- A) Are the overall results good? Briefly explain your logic. Which variables are significant? Explain your logic.
- B) If oranges cost \$1 each, cars cost \$1000 each, dogs cost \$20 each, and the average income of the customers was \$20,000 per year, then how many oranges would you expect to sell? Show all work and briefly explain how you got it. What is the own-price elasticity of demand? Show all work and briefly explain how you got it.
- C) Given the results, are cars and oranges substitutes, likely substitutes, likely complements, complements or unable to be determined from this data? Explain your answer without calculating the elasticity. Given your results, are oranges inferior, likely inferior, normal, likely normal, or unable to be determined from this data? Explain your logic without calculating the elasticity. (I left out “luxury” and “likely luxury” because you would need to know the elasticity to determine if it is a luxury vs normal.)

2) (18 points) Answer EITHER Part A OR Part B.

- A) Draw the LRATC graph with three SRATC curves. Explain why the LRATC is the envelope of the other lines.
- B) Draw the MRP_L/MRC_L diagram for a firm. Illustrate the effects of an increase in the demand for the good. Explain why the curve(s) moved as drawn. What happens to the wage rate and the quantity of labor used?

3) (24 points) Answer EITHER Part A OR Part B.

A) Draw the ATC/AVC/AFC/MC diagram. Illustrate the effects of an increase in the salary of the president of the company. Explain why the curve(s) moved as drawn.

B) Draw the ATC/AVC/AFC/MC diagram. Illustrate the effects of an increase in the wage rate of the assembly line workers. Explain why the curve(s) moved as drawn.

4) (10 points each) Answer THREE of the following questions using the graph below. **Explain what you did and show all calculations.**

A) What are the wage and rental rates?

B) Find the SRATC for TWO of the quantities. Which two lettered points are you referring to?

C) Find the LRMC for TWO of the quantities. Which two lettered points are you referring to?

D) Using points C and D, does this graph show increasing returns to scale, constant returns to scale, or decreasing returns to scale?

