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 10-point question should take 5 minutes. I cannot give extra time because some students have a class after your class.

1) (8 points) Answer EITHER Part A OR Part B.
A) What do you think is the value of the cross-price elasticity of demand for bananas versus pears? Why did you choose that number?
B) What do you think is the value of the income elasticity of demand for an iPod? Why did you choose that number?

2) (10 points) For ONE of the following elasticities, calculate it using the table to the right. Briefly explain how you chose the two data points you used and show all work. What does that information tell us about the product(s)?
A) Own-price elasticity using **arc** elasticity.
B) Income elasticity using **point** elasticity.

Data point	P_x	P_y	Income	Q_x
A	\$4/X	\$2/Y	\$30,000	10
B	\$3/X	\$4/Y	\$20,000	8
C	\$3/X	\$4/Y	\$40,000	10
D	\$5/X	\$4/Y	\$20,000	12
E	\$5/X	\$5/Y	\$20,000	8

3) (10 points) Answer EITHER Part A OR Part B.
A) Suppose a firm is facing a demand curve with an own-price elasticity of -0.25. What is the marginal revenue for this firm? Use the appropriate formula, show all work, and briefly explain what you did.
B) If the own-price elasticity of demand is -0.3 and you raise your prices by 20%, then how much would you expect your sales to change? Explain your logic.

4) (14 points) Answer EITHER Part A OR Part B.
A) What type of product would you use a market experiment for? Explain your logic.
B) Draw normal indifference curves. Use the equation for the slope to explain why the curves take their shape.

5) (28 points) Answer EITHER Part A OR Part B.
A) Draw an indifference curve/budget constraint diagram for cats and dogs. Illustrate an increase in the price of cats on the diagram. Explain why your curve(s) moved as drawn. Draw another line to determine the income and substitution effects. Explain how you know where the income and substitution effects are. Given your drawing, are the cats and dogs substitutes or complements? Explain your logic.
B) Draw an indifference curve/budget constraint diagram for basketballs and volleyballs. Illustrate a decrease in the price of volleyballs on the diagram. Explain why your curve(s) moved as drawn. Draw another line to determine the income and substitution effects. Explain how you know where the income and substitution effects are. Given your drawing, are either of the goods inferior? Explain your logic.

6) (10 points each) Use the table on the back to answer THREE parts of this question. The regression is to

predict the sales of apples.
A) Are the overall regression results reliable enough for you to go by? Explain your answer.
B) Suppose the orange manufacturer charges $2/orange and you sold 250 apples. What would the cross-price elasticity be? Show all work and briefly explain your logic. Do not worry about whether the results are significant.
C) Are melons and apples substitutes, likely substitutes, complements, likely complements, or not enough information? Explain your logic.
D) Which variables are statistically significant? Explain your logic.
E) What is the equation you would use to predict the sales of apples? Briefly explain how you derived it.

Regression Statistics	
Multiple R	0.90348814
R Square	0.81629081
Adjusted R Square	0.79541477
Standard Error	40.0138727
Observations	50

Analysis of Variance

	df	***Sum of Squares***	***Mean Square***	***F***	***Significance F***
Regression	5	313031.3808	62606.2762	39.1018	4.083e-15
Residual	44	70448.8403	1601.1100		
Total	49	383480.2211			

	Coefficients	***Standard Error***	***t Statistic***	***P-value***	***Lower 95.00***	***Upper 95.00***
Intercept	-364.3845	316.6732	-1.1507	0.2555	-1002.5974	273.8285
P apples	-130.0081	81.5613	-1.5940	0.1174	-294.3841	34.3679
P oranges	154.7931	88.8019	1.7431	0.0876	-24.1754	333.7615
P melons	39.9214	83.6042	0.4775	0.6351	-128.5717	208.4145
Income	0.4191	0.1830	2.2897	0.0264	0.0502	0.7880
Advertising	159.9736	80.1105	1.9969	0.0514	-1.4784	321.4257