

SPRING 2017
AEM 4550: Economics of Advertising
Prof. Jura Liaukonyte

HW1

Ground rules for Homework 1-5:

1. HW is due at the beginning of class on the due date designated for each homework (see course website for the list of dates).
2. You should turn in your homework 100% typed. I realize that for some students handwriting is more convenient or efficient, especially when it comes to writing out math equations. However, you should practice typing math formulas in MS Word or other word processing software of your choice.
3. Include a title page listing your name (or names if it is a group work) and homework number.
4. Please staple your sheets. Both your TA and I will look at each homework, so we don't want to lose any of your sheets.
5. If I have specific instructions or rules relating to any individual parts within homework assignments, I will list them there.

Ground rules for HW1:

1. HW 1 is due on **February 14** at the beginning of class
2. You will work individually on HW1. Homework 2 through 5 will be group work.

PART I

Consider a firm operating as a monopoly and producing a new version of a computer memory chip. The firm has hired a consultant and is seeking advice about pricing and advertising strategy for the chip. With the data that the firm provided, the consultant was able to estimate the demand curve for the chips:

$$Q(P,A) = 1000 - 10P + 40A^{0.25}$$

Where:

Q(P, A) = Quantity of chips demanded per month

P = Price per chip

A = Total dollar advertising expenditures, measured in dollars

Suppose the firm were to introduce the chip at the price of \$100. Fill in the E-K columns in the spreadsheet posted on the course website titled "HW1Spreadsheet". The table is constructed by

entering \$100 increments in advertising expenditures down Column C, and holding price constant down Column D. For each combination of price and advertising levels, calculate:

- Quantity demanded (Q) by substituting price and advertising expenditures into the demand formula (Column E)
- Total sales (total revenue) (Column F)
- Price Elasticity (Column G)
- Advertising Elasticity (Column H)
- Dorfman-Steiner Ratio (ratio of elasticities) (Column I)
- Advertising-To-Sales Ratio (Column J)
- Absolute Difference between Column I and Column J.

Find the optimal advertising expenditures. Highlight (or bold) the row with the optimal price and advertising levels. Briefly discuss your results and attach the printed table.

PART II.

Read carefully *The Atlantic* article about the diamond industry “Have you ever tried to sell a diamond?” and answer the following questions:

1. As you probably noted, this article was written in 1982. Your assignment is to research the industry during the period **AFTER** the article was written

Your assignment is to write a 2-3 page summary (double spaced) of what happened to the industry from the **early 1980s to today**.

- What major transformations did the industry go through?
 - What were the noteworthy events that happened in the industry within the last 30 years?
 - What promotional strategies were implemented? Were they successful?
 - What happened to diamond prices?
2. List and briefly evaluate the advertising/promotion strategies that were mentioned in the article and were employed up to the early 1980s.

PART III.

Write a blog post. Blog assignment guidelines:

<http://courses.cit.cornell.edu/jl2545/4550/blogguide4550.htm>

Also check the blog website www.overtcollusion.com to see examples of good blog posts.

IMPORTANT: You have to submit your blog post in two ways:

- 1) as part of your typed and printed HW1 and
- 2) emailed to your TA mfm88@cornell.edu. Please make sure that the emailed post contains your name (or the names of group members).

Please pay attention to the fact that every submitted blog post should entail some hyperlinks and most really good posts have pictures or embedded videos.

- Learn how to insert a hyperlink in MS Word [here](#).
- Learn how to insert a picture in MS Word [here](#).
- Since I will be posting the selected blog posts on www.overtcollusion.com and there is no easy way to embed a video in MS Word, just provide a link to the video that you would like embedded, should your post be selected to be published.

Potential topics of choice for this HW assignment:

1. Product Differentiation
2. Advertising and Market Power
3. Brand Images
4. Other topic that relates to issues we discussed in class.
5. In case you are unsure if your selected topic fits, email me and we will discuss!