ECON 110, Prof. Hogendorn, Spring 2011

Second Midterm Exam

Each part of each question (a, b, c, etc.) is worth 5 points. Make sure to allot your time accordingly. Total of 30 points, -1 for messiness, -2 for extreme messiness.

1. Benetton has a stock market capitalization of \$1.2 billion and trades at a price-earnings ratio of 6.5. Hennes & Mauritz, the parent of H&M, trades at a price-earnings ratio of 18.3.

   What are Benetton's yearly earnings? Does the stock market expect them to rise faster or slower than H&M's?

2. *MovieWindows.* The movie industry is struggling to adapt to technology change. Traditionally, a movie was released in cinemas for a 4 month "window," and then it became available on DVD. Now DVD sales have fallen because consumers have more alternatives available for watching movies. Some movie studios are thinking about shortening the window (and sending films direct to Netflix, iTunes, etc.) in order to increase sales.

   (a) During the window, a movie studio has a monopoly on selling that particular movie to cinemas. Let's say the monopoly price they set is $p_m = 0.96$, which is to say that the studio takes for 96% of the cinema's box office revenue. The movie sells $Q_m = 20$ (million) tickets. Let the demand curve be

   $$p = 1.64 - 0.034Q$$

   and the marginal cost be a constant: $MC = AVC = 0.28$.

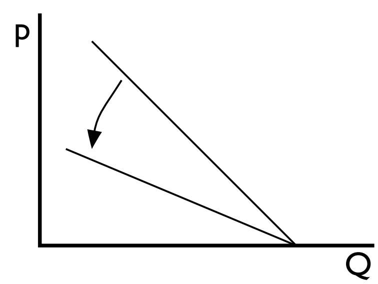
Write the profit function. Write out the first order condition, but do not solve for Q yet. Write in words the mathematical and the economic intuition behind the first order condition.

(b) OK, now verify mathematically that the monopoly price and quantity mentioned above are optimal, and illustrate on a diagram.

(c) Show in your diagram and calculate the amount of deadweight loss caused by the monopoly. (Note that using the "price" of 0.96, deadweight loss will be expressed as a percent of total ticket sales, not in dollars. To convert to dollars, just multiply by an average ticket price of $8.)

(d) True or false, and explain with a graph: since the monopoly price is well above the average variable cost, all movies make economic profits.

(e) If the cinema window were reduced, waiting for the movie to come out on DVD or online would be a better substitute for impatient consumers, increasing elasticity but also shifting demand. Let's say that demand would pivot like this:



Show what happens on the monopoly diagram. Does monopoly price rise or fall? Monopoly operating profit? You don't have to find any of these mathematically, but you do need to show them graphically.

When you are finished, please keep the exam sheet and hand in your blue book. Thanks.