Econ 101
Fall 2014
Problem Set 8

1) For each of the following, is it likely that the industry is perfectly competitive? Referring to market share, standardization of the product, and/or free entry and exit, explain your answers.

a. Aspirin
b. Sport Utility Vehicles (SUVs)

2) Bob produces DVD movies for sale, which requires a building and a machine that copies the original movie onto a DVD. Bob rents a building for $30,000 per month and rents a machine for $20,000 a month. Those are his fixed costs. His variable cost per month is given in the accompanying table.

Quantity of DVDs	Variable Cost
0	$0
1,000	5,000
2,000	8,000
3,000	9,000
4,000	14,000
5,000	20,000
6,000	33,000
7,000	49,000
8,000	72,000
9,000	99,000
10,000	150,000

a. Calculate Bob's average variable cost, average total cost, and marginal cost (assume MC is constant for each 1,000 units of output) for each quantity of output.
b. Suppose there is free entry into the industry, and anyone who enters will face the same costs as Bob. Suppose that currently the price of a DVD is $25. What will Bob's profit be? Is this a long-run equilibrium? If not, what will the price of DVD movies be in the long run?

3) Consider Bob's DVD company described in Problem 2. Assume that DVD production is a perfectly competitive industry. For each of the following questions, explain your answers.

a. What is Bob's break-even price? What is his shut-down price?
b. Suppose the price of a DVD is $2. What should Bob do in the short run?
c. Suppose the price of a DVD is $7. What is the profit-maximizing quantity of DVDs that Bob should produce? What will his total profit be? Will he produce or shut down in the short run? Will he stay in the industry or exit in the long run?
d. Suppose instead that the price of DVDs is $20. Now what is the profit-maximizing quantity of DVDs that Bob should produce? What will his total profit

be now? Will he produce or shut down in the short run? Will he stay in the industry or exit in the long run?

4) Evaluate each of the following statements. If a statement is true, explain why; if it is false, identify the mistake and try to correct it.

a. A profit-maximizing firm in a perfectly competitive industry should select the output level at which the difference between the market price and marginal cost is greatest.
b. An increase in fixed cost lowers the profit-maximizing quantity of output produced in the short-run.

5) Each of the following firms possesses market power. Explain its likely source.

a. Merck, the producer of the patented cholesterol-lowering drug Zetia
b. WaterWorks, a provider of piped water
c. Chiquita, a supplier of bananas and owner of most banana plantations
d. The Walt Disney Company, the creators of Mickey Mouse

6) Bob, Bill, Ben, and Brad Baxter have just made a documentary movie about their basketball team. They are thinking about making the movie available for download on the Internet, and they can act as a single-price monopolist if they choose to. Each time the movie is downloaded, their internet service provider charges them a fee of $4. The Baxter brothers are arguing about which price to charge customers per download. The accompanying table shows the demand schedule for their film.

Price of Download	Quantity of Downloads Demanded
$12	0
10	1
8	2
6	3
4	4
2	5
0	6

a. Calculate the total revenue and the marginal revenue per download
b. Bob is proud of the film and wants as many people as possible to download it. Which price would he choose? How many downloads would be sold?
c. Bill wants as much total revenue as possible. Which price would he choose? How many downloads would be sold?
d. Ben wants to maximize profit. Which price would he choose? How many downloads would be sold?
e. Brad wants to charge the efficient price. Which price would he choose? How many downloads would be sold?

7) Consider the following demand schedule facing a monopolist.

Price	Quantity Demanded
$500	0
400	1
300	2
200	3
100	4
0	5

a. Explain why the marginal revenue from an additional unit sold is less than the price of the unit.
b. Suppose the monopolist currently charges $200 for the good. If it lowers the price to $100, how large is the price effect? How large is the quantity effect?