

## MERGER ANTITRUST LAW

LAWJ/G-1469-05  
Georgetown University Law Center  
Fall 2024

Tuesdays and Thursdays, 3:30 pm – 5:30 pm  
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### CLASS 9 WRITTEN ASSIGNMENT

#### Instructions

Submit by email by 3:30 pm on Tuesday, September 24  
Send to [wdc30@georgetown.edu](mailto:wdc30@georgetown.edu)  
Subject line: Merger Antitrust Law: Assignment for Class 9

#### Assignment

Calls for short answers. Since the assignment calls for some equations, feel free to write your answers using a pencil and paper (rather than a computer) if that is easier, and attach a scan or a photograph of your work to your email.

Assumptions: Consider a single firm, Avco.

1. The market price is  $p$  (whatever that may be)
2. The firm's residual demand function is  $q = 100 - 8p$
3. The firm has fixed costs  $f = 25$  and constant marginal costs  $c = 5$

Questions:

1. Explain the concept of a demand curve. Why is it downward sloping?
2. Graph Avco's demand curve. Be sure to label the axes.
3. What is the equation for the firm's inverse demand curve?
4. Graph Avco's inverse demand curve. Be sure to label the axes.
5. If  $q = 20$ , what is Avco's market clearing price?
6. What is the equation for Avco's revenues as a function of Avco's production level? What are Avco's revenues when  $q = 20$ ?
7. Explain the concept of marginal revenue and how it relates to gross revenue gains and losses associated with incremental sales. What is Avco's marginal revenue (in the discrete case) when  $q = 20$ ?
8. What is Avco's marginal revenue (in the continuous case) when  $q = 20$ ?

9. Explain the concepts of total cost, fixed cost, total variable cost, average variable cost, marginal cost, and constant marginal cost. What are the equations for these variables? What are Avco's various costs when  $q = 20$ ?
10. Explain why the firm maximizes profit when marginal revenue equals marginal cost.
11. Given the above assumptions, what are Avco's price, output, revenues, total costs, and profits at the profit-maximizing level of output?
12. Say Avco's fixed costs  $f$  decrease to 20. What are Avco's price, output, revenues, total costs, and profits at the profit-maximizing level of output in this new situation?
13. Say Avco's fixed costs  $f$  remain at 25, but its (constant) marginal cost  $c$  decreases to 4. What are Avco's price, output, revenues, total costs, and profits at the profit-maximizing level of output in this situation?
14. Explain what Avco should do and why if it finds that marginal revenue is greater than its marginal cost at current production (say because of a shift in demand).

If you have any questions, send me an email. See you in class.

*Note:* If you need an online calculator, look at Math Papa (<https://www.mathpapa.com/algebra-calculator.html>). It is actually an algebraic calculator, so it solves equations. I use it all the time.