ECON 120 - Regulation & Antitrust Policy
Drake University, Spring 2026
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EXAMINATION 3 VERSION B
"Antitrust Policy"
April 16, 2026

INSTRUCTIONS: This exam is closed-book, closed-notes. Simple calculators are permitted, but graphing calculators or calculators with alphabetical keyboards are NOT permitted. Mobile phones or other wireless devices are NOT permitted. Points will be subtracted for illegible writing or incorrect rounding. Point values for each question are noted in brackets.

I. Multiple choice: Please circle the one best answer to each question. [1 pt each, 19 pts total]

(1) A vertical merger is a merger between
a. two firms that buy and sell from each other, such as a coal mine and a steel mill.
b. two firms that produce related products, such as a firm that makes soccer balls and a firm that makes tennis balls.
c. two firms that produce unrelated products, such as a firm that makes bread and a firm that operates hotels.
d. two firms that make the same product in the same market, such as car manufacturer and another car manufacturer.

(2) The term "economies of scope" refers to
a. large economies like China, the United States, and Germany.
b. average costs that decrease with output.
c. total costs that increase with output.
d. total costs that decrease with diversification.

(3) The *Brown Shoe* (1962) and *Von's Grocery* (1966) cases showed the U.S. Supreme Court's
a. reluctance to interfere with horizontal mergers.
b. concern for potential competition.
c. willingness to stop mergers even involving small market shares.
d. interest in applying the HHI measure of concentration.
e. tendency to define markets very narrowly.
f. tendency to define markets very broadly.

(4) The law that prohibits mergers if the effect is "substantially to lessen competition, or to tend to create a monopoly" is the
a. Sherman Act Section 1.
b. Sherman Act Section 2.
c. FTC Act Section 5.
d. Clayton Act Section 7.

(5) Which law requires prior notification of mergers to the Federal Trade Commission and the Antitrust Division of the Department of Justice?
a. Clayton Act.
b. Federal Trade Commission Act.
c. Celler-Kefauver Act.
d. Sherman Act Section 2.
e. Hart-Scott-Rodino Act.

(6) According to the 2023 DOJ-FTC *Merger Guidelines*, the ability of a hypothetical monopolist to impose a "small but significant and nontransitory increase in price" should be used to
a. compare with any cost savings.
b. regulate price in a market.
c. distinguish vertical, horizontal, and conglomerate mergers.
d. compute a merged firm's Lerner index.
e. define the extent of a market.
f. decide whether a merger should be opposed.

(7) Suppose a monopolist sells a software application that includes a component sold to it by a different monopolist. If the two monopolists merge then their total profit would
a. fall but the price of the software would rise.
b. fall and the price of the software would fall.
c. rise and the price of the software would rise.
d. rise but the price of the software would fall.
e. remain constant and the price of the software would remain constant.
f. Cannot be determined from information given.

(8) Suppose a software monopolist sells an operating system to manufacturers of computers. Each computer requires one copy of the operating system. (Assume the market for *computers* is competitive.) If the software monopolist were to extend its monopoly into the downstream computer market, its profit
a. would fall to zero.
b. would remain unchanged.
c. might increase.

(9) If a downstream firm merges with an upstream firm, this will raise the costs of the remaining downstream firms if the upstream market is
a. already vertically integrated.
b. competitive.
c. a Cournot oligopoly.
d. none of the above.

(10) The U.S. government was most aggressive in preventing vertical mergers
a. in the 1960s.
b. in the 1980s.
c. since 1995.
d. The government has always treated vertical mergers extremely aggressively.

(11) Examples of vertical restraints do *not* include
a. tying.
b. exclusive dealing.
c. resale price maintenance.
d. predatory pricing.
e. territorial restraints.

(12) Which practice did the courts hold to be *per se* illegal from the *Dr. Miles* case in 1911 until *Leegin v. PSKS Inc.* in 2007?
a. vertical mergers.
b. resale price maintenance.
c. territorial restraints.
d. exclusive dealing.

(13) Suppose a manufacturer of computer printers has some market power. Also suppose the manufacturer requires its customers to buy only its own brand of printer cartridges. If the explanation for this tying practice is price discrimination, then we would expect the manufacturer's brand of printer cartridges to be priced
a. above cost.
b. below cost.
c. at cost.
d. cannot be determined from information given.

(14) To be convicted of violating the Sherman Act Section 2, firms must possess monopoly power and
a. have lower cost than any potential rival.
b. show intent to monopolize a market.
c. have higher cost than any potential rival.
d. enjoy above-normal profit.

(15) One remedy for monopolization is to break up the firm, as was done in the case of
a. U.S. v. United Shoe Machinery (1953).
b. Utah Pie v. Continental Baking (1967).
c. Berkey Photo v. Kodak (1979).
d. Standard Oil v. U.S (1911).
e. U.S. v. U.S. Steel (1920).
f. U.S. v. Alcoa (1945).

(16) Predatory pricing can be profitable only if predation is followed by a period of
a. accommodation.
b. losses.
c. competition.
d. recoupment.
e. price discrimination.

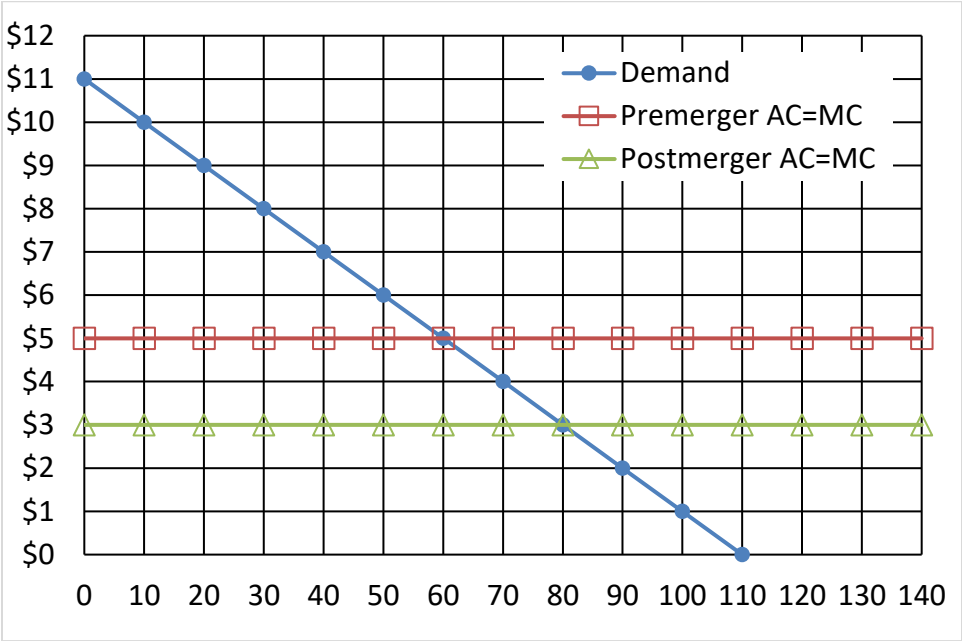
(17) According to the "essential facilities" doctrine articulated by the Court of Appeals in *MCI v. AT&T* (1982), a company is guilty of monopolization if one can show all of the following, *except*
a. denial of use of facility to the competitor.
b. the feasibility of providing the facility to the competitor.
c. control of the facility by a monopolist.
d. a difference in price between the monopolist and the competitor.
e. the competitor's inability to duplicate the facility.

(18) The Robinson-Patman Act, outlawing price discrimination, was passed in 1936 to protect
a. manufacturers.
b. consumers.
c. large chain stores.
d. small independent retailers.
e. all of the above.

(19) Most observers agree that the task for antitrust in the *new economy* is
a. to ensure that prices are close to marginal cost.
b. to prevent dominant firms from stifling challenges by new entrants.
c. to minimize disruption to markets.
d. to prevent markets from becoming too concentrated.
e. all of the above.

II. Problems: Insert your answer to each question in the box provided. Use margins and graphs for scratch work. Only the answers in the boxes will be graded. Work carefully—partial credit is not normally given for questions in this section.

(1) [Welfare tradeoffs of mergers: 14 pts] Consider the industry depicted in the graph below.



A proposed merger in this industry would have two effects. First, it would change the industry from a competitive market to a monopoly. Second, it would reduce AC and MC from $5 to $3 due to various efficiencies.

a. What price would the new monopoly charge? [Hint: draw the MR curve carefully.]	$
b. Compute the total loss of consumer surplus as a result of monopoly pricing.	$
c. How much of this loss is a transfer to the monopoly producer?	$
d. Compute the deadweight loss as a result of monopoly pricing (without considering cost savings).	$
e. Compute the cost savings in producing the monopoly level of output as a result of the merger.	$
f. Does net social welfare *increase or decrease* as a result of the merger?	
g. By how much?	$

(2) [HHI and merger guidelines: 12 pts] Suppose the market shares of the firms in an industry are as follows.

Firm	A	B	C	D	E	F	G	H	I
Market share	20%	20%	10%	10%	10%	10%	10%	5%	5%

a. Compute the current value of the Hirschman-Herfindahl index.

b. Under the 2023 DOJ-FTC *Merger Guidelines*, would this industry be classified as "highly concentrated"? Answer YES or NO.

Now suppose Firm A were to merge with Firm B.

c. Compute the postmerger value of the Hirschman-Herfindahl index.

d. Under the 2023 *Merger Guidelines*, would this industry now be classified as "highly concentrated"? Answer YES or NO.

e. On the basis of these calculations alone, under the 2023 *Guidelines*, would this merger be presumed to be illegal? Why?

(3) [Upward pricing pressure: 8 pts] Suppose initially Firm A has 40% market share and Firm B has 20% market share. Assume that all customers buy from *some* firm in this market.

a. Compute an estimate of the diversion ratio D_{AB} –that is, the number of units lost by Firm B when Firm A sells one more unit.

b. Compute an estimate of the diversion ratio D_{BA} –that is, the number of units lost by Firm A when Firm B sells one more unit.

Further assume the following.

- Firm A's price and marginal cost are \$21 and \$17 respectively.
- Firm B's price and marginal cost are \$23 and \$14, respectively.
- It is estimated that a merger would lower Firm A's marginal cost to \$16.

Suppose Firms A and B were to merge. Compute the consequences for **Firm A**'s pricing.

c. Compute the upward pricing pressure on Firm A caused by the merger (UPP_A).

d. Compute the hypothetical value of efficiencies (that is, the decrease in Firm A's marginal cost) that would be required to reduce UPP_A to zero.

(4) [Successive monopolies with fixed proportions: 18 pts] Suppose an upstream monopoly firm produces a component that is used by a downstream firm to make a particular appliance. The upstream firm has constant marginal cost (equal to average cost) of MC_C= \$1. Each appliance requires exactly one component and \$2 of other inputs in fixed proportion. Therefore the downstream firm has constant marginal cost (equal to average cost) of \$2 plus the price of the component, P_C, which is set by the upstream firm. The key assumptions are

Marginal and average cost of component:	$MC_C = AC_C = \$1$.
Marginal and average cost of appliance:	$MC_A = AC_A = \$2 + P_C$
Demand for appliance:	$P_A = 7 - (Q/10)$.

a. [2 pts] Find the equation for the marginal revenue curve for the appliance. [Hint: If demand is linear, marginal revenue has the same vertical intercept, but twice the slope, as the demand curve.]

MR_A =

Now compare market outcomes under two scenarios: (i) upstream and downstream markets are both monopolized, and (ii) upstream and downstream are served by a vertically-integrated monopoly.

(i) First suppose both upstream and downstream markets are both monopolized. This is the scenario of "successive monopolies" or "double marginalization."

b. [2 pts] Find the equation for the derived demand curve for component. [Hint: Set the marginal cost of the appliances equal to MR_A and solve for P_C.]

P_C =

c. [2 pts] Find the equation for the marginal revenue curve for component. [Hint: For linear demand curves, marginal revenue has the same vertical intercept, but twice the slope, as the demand curve.]

MR_C =

Now compute the quantity of component (and thus appliances) sold Q, the price of component P_C, the upstream component monopolist's profit, the price of appliances P_A, and the downstream appliance monopoly's profit. Insert your answers in column (i) in the Table of Results below.

(ii) Second, assume the upstream and downstream industries are served by a vertically-integrated monopoly. The marginal cost of appliances for the vertically-integrated monopoly is therefore MC_A = \$1 + \$2. Now compute the quantity of appliances, the price of appliances P_A, and the integrated monopolist's profit. Insert your answers in column (ii) of the Table of Results below.

Table of Results [9 pts]	**(i) Successive monopolies**	**(ii) Vertically integrated monopoly**
Q = quantity of components (and appliances)		
P_C = price of component	\$	
Profit of upstream firm	\$	
P_A = price of appliances	\$	\$
Profit of downstream firm	\$	
Total upstream + downstream profits	\$	\$

Question continues on next page.

d. [3 pts] Suppose this industry were initially organized as successive monopolies. Then suppose the upstream firm proposed to merge with the downstream firm. Should the government try to block the merger? Why or why not?

(5) [Tying: 10 pts] Suppose a monopoly cable TV service believes that representative households A, B, and C are willing to pay the following amounts for premium channels.

	Household A	Household B	Household C
Comedy channel	$25	$10	$5
Sports channel	$15	$30	$25

Suppose each channel were priced separately, and suppose the cable TV service wishes to maximize revenue.

a. What price should be charged for the comedy channel? $

b. What price should be charged for the sports channel? $

c. How much revenue would the software company receive in total for both channels and all three customers? $

Suppose both channels were bundled and priced as a single "premium package." Again assume the cable TV service wishes to maximize revenue.

d. What price should be charged for the package of two channels? $

e. How much revenue would the cable TV service receive in total for all three customers? $

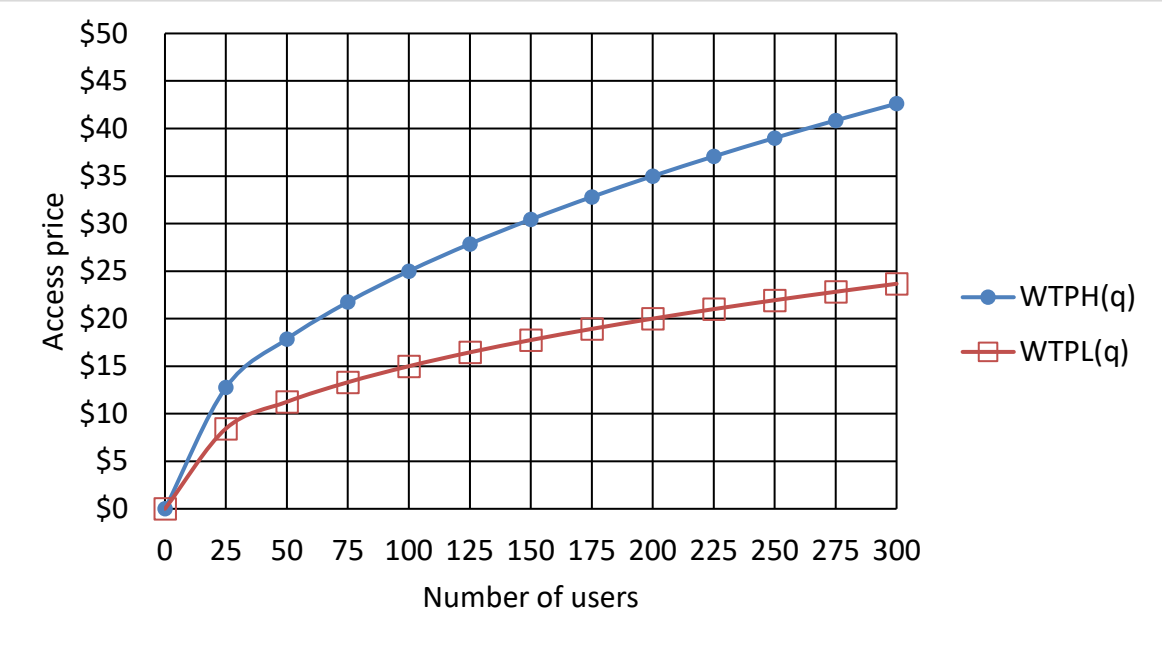
(6) [Price discrimination: 6 pts] Suppose a monopoly believes its Blue customers have an elasticity of demand for its product equal to -6, and its Green customers have an elasticity of -3. The marginal cost of the product to either segment is $10.

a. To maximize profit, which market segment should get the *lower* price?

b. Compute the profit-maximizing price for Blue customers. $

c. Compute the profit-maximizing price for Green customers. $

(7) [Network effects: 8 pts] The following graph shows *willingness to pay* for access to a network for *two representative users*, a high-intensity user (WTPH) and a low-intensity user (WTPL). Assume there are 100 potential users of each type.



a. Explain why these curves slope upward.

b. What range of access prices (P) would be compatible in equilibrium with **no users** on the network?	$ < P < $
c. What range of access prices would be compatible in equilibrium with **100 users** on the network?	$ < P < $
d. What range of access prices would be compatible in equilibrium with **200 users** on the network?	$ < P < $

III. Critical thinking: Write a one-paragraph essay answering *one* question below (your choice). [5 pts]

(1) In merger court cases, the government usually argues for a narrow definition of the relevant market and the merging firms usually argue for a broad definition of the relevant market. Why?

(2) Acme Manufacturing Company is producing 10,000 units of output per month with the following monthly costs:

Payroll	$60,000
Energy	$10,000
Supplies	$20,000
Long-term leases on buildings and equipment	$40,000
Administration and overhead	$70,000

Acme currently charges a price of $10 for its product. A rival has accused Acme of predatory pricing in violation of the Sherman Act. Would Acme be convicted if the court used the Areeda-Turner rule? Why or why not?

Please circle the question you are answering. Write your answer below. Full credit requires correct economic reasoning, legible writing, good grammar including complete sentences, and accurate spelling.

[end of exam]