QUIZ 8 VERSION A
"Vertical Mergers and Vertical Restraints"

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: Circle the one best answer to each question. [3 pts each: 21 pts total]

(1) The view that vertical mergers are generally not a problem, because simple models show that either they are unprofitable or they do not decrease welfare, is called the
a.   Traditional or Harvard School view.
b.   Chicago School view.
c.   Post-Chicago view.
d.   Supply-side view.

(2) Suppose there are only two makers of a particular part which is used in flat-screen televisions. The market for parts is therefore not perfectly competitive. If one parts maker merges with a television maker, the *other* television makers' costs will
a.   increase.
b.   decrease.
c.   not be affected because they did not merge.
d.   Cannot be determined from information given.

(3) The government was most lenient on vertical mergers
a.   in the 1960s.
b.   in the 1980s.
c.   since 1995.
d.   The government has always treated vertical mergers extremely leniently.

(4) Suppose the manufacturer of a product wants to induce retailers to provide marketing services, like showrooms and personalized sales. There are several ways a manufacturer can do this, but they do *not* include
a.   setting a minimum retail price.
b.   setting a maximum retail price.
c.   giving retailers exclusive territories.

(5) 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.   territorial restraints.
b.   exclusive dealing.
c.   vertical mergers.
d.   resale price maintenance.

(6) Exclusive dealing arrangements, whereby a retailer agrees not to sell the products of a manufacturer's rivals, are generally
a.   legal.
b.   illegal.
c.   Cannot be determined from information given.

(7) Suppose Acme Fasteners makes staple guns and has some market power. Now Acme requires its customers to buy only its own brand of staples for those staple guns. If the explanation for this tying practice is price discrimination, then we would expect Acme 's brand of staples to be priced
a.   at cost.
b.   above cost.
c.   below cost.
d.   cannot be determined from information given.

II. Problems: Insert your answer to each question below in the box provided. Use the 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) [Motivations for vertical mergers: 12 pts] Check one answer to each question below.

a. Which structure can better reduce inflexibility created by formal contracts?

[ ] two separate firms.   [ ] single vertically-integrated firm.

b. Which structure creates greater incentives for each unit to minimize costs?

[ ] two separate firms.   [ ] single vertically-integrated firm.

c. Which structure can spread the risk of price fluctuations in intermediate goods?

[ ] two separate firms.   [ ] single vertically-integrated firm.

d. Which structure can avoid the problem of "double maginalization"?

[ ] two separate firms.   [ ] single vertically-integrated firm.

(2) [Tying,: 21 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.

	Comedy channel	Sports channel	Nature channel
Household A	$30	$20	$5
Household B	$10	$25	$10
Household C	$20	$10	$15

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. What price should be charged for the nature channel? $

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

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

e. What price should be charged for the package of three channels? $

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

g. Should the cable TV service sell the channels *separately* or as a *package*?

(3) [Vertical integration of successive monopolies with fixed proportions: 42 pts] Suppose an upstream monopoly firm produces a proprietary sauce that is used by a downstream industry to make pizzas. The upstream firm has constant marginal cost (equal to average cost) of MC_S= \$1. Each pizza requires exactly one unit of sauce and \$3 of other inputs in fixed proportion. Therefore the downstream industry has constant marginal cost (equal to average cost) of \$3 plus the price of sauce, P_S, which set by the upstream monopolist. The key assumptions are

Marginal and average cost of sauce:	MC_S	$= AC_S = \$1.$
Marginal and average cost of pizzas:	MC_P	$= AC_P = \$3 + P_S$
Demand for pizzas:	P_P	$= 8 - (Q/500).$

a. [3 pts] Find the equation for the marginal revenue curve for pizzas. [Hint: If demand is linear, marginal revenue has the same vertical intercept, but twice the slope, as the demand curve.]

$MR_P =$

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 the upstream and downstream markets are both monopolized. This is the scenario of "successive monopolies" or "double marginalization."

b. [3 pts] Find the equation for the derived demand curve for sauce. [Hint: Set the marginal cost of the pizzas equal to MR_P and solve for P_S.]

$P_S =$

c. [3 pts] Find the equation for the marginal revenue curve for sauce. [Hint: For linear demand curves, marginal revenue has the same vertical intercept, but twice the slope, as the demand curve.]

$MR_S =$

Now compute the quantity of sauce (and thus pizzas) sold Q, the price of sauce P_S, the upstream sauce monopolist's profit, the price of pizzas P_P, and the downstream pizza monopolist's profit. Insert your answers in column (i) in the **Table of Results** on the next page.

[Problem continues on next page.]

(ii) Second, assume the upstream and downstream industries are served by a vertically-integrated monopoly. The marginal cost of pizzas for the vertically-integrated monopoly is therefore MC = $1 + $3.
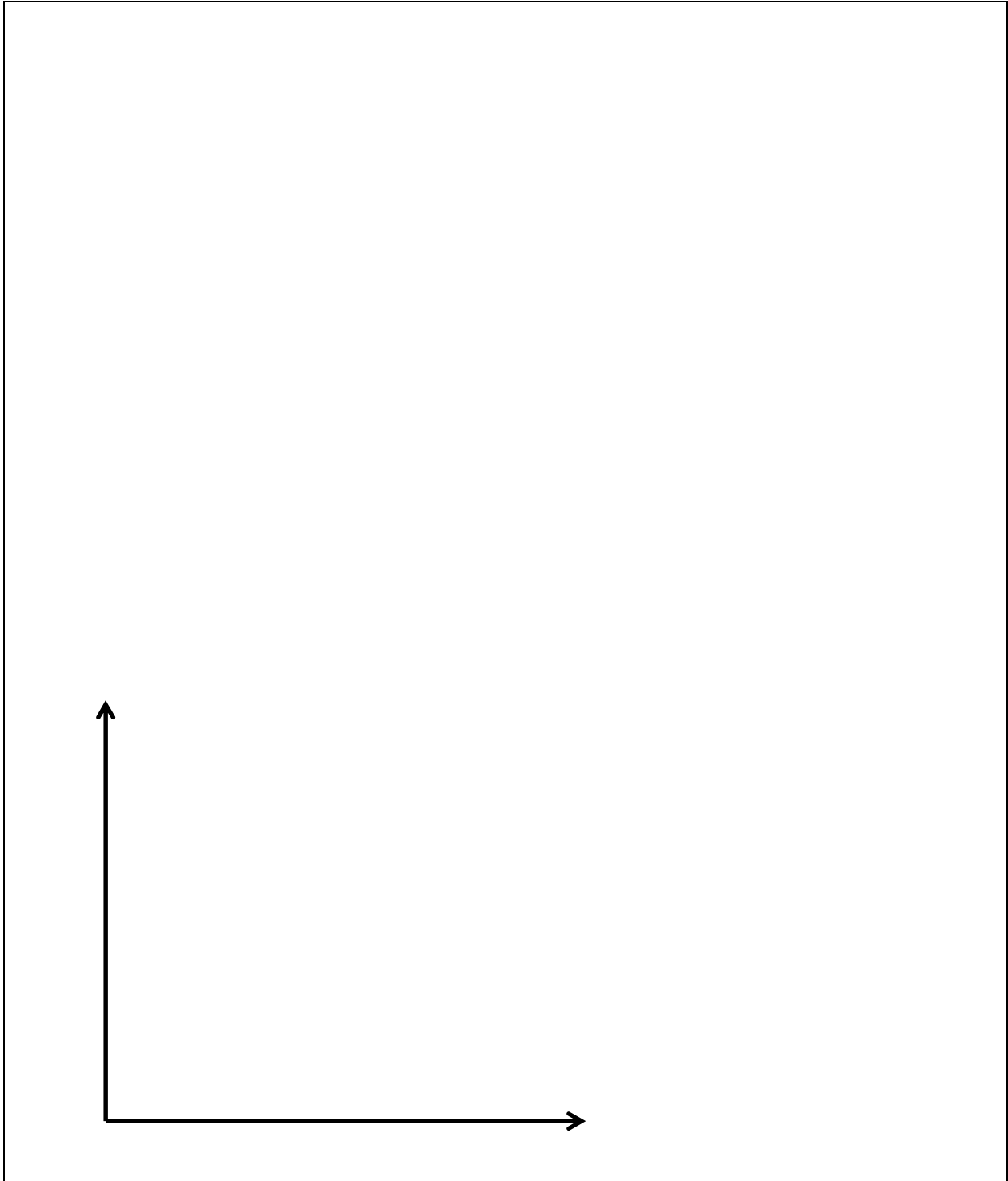
Now compute the quantity of pizzas, the price of pizzas P_P, and the integrated monopolist's profit. Insert your answers in column (ii) of the Table of Results below.

Table of results [27 pts]	(i) Successive monopolies	(ii) Vertically integrated monopoly
Q = quantity of sauce (and pizzas)		
P_S = price of sauce	$	
Profit of upstream firm	$	
P_P = price of pizzas	$	$
Profit of downstream firm	$	
Total upstream + downstream profits	$	$

(iii) Third, consider the policy implications.

d. [6 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?

III. Critical thinking [4 pts] Suppose a gasoline producer (like *Phillips* or *Shell*) merged with a gasoline distributor (like *Kum and Go* or *Casey's*). Assume both markets are competitive before and after the merger. Would the combined firms' profit likely increase or decrease? Why? Would social welfare increase or decrease? Why? Illustrate your answer with a supply-and-demand graph.

[end of quiz]