ECON 180 - Regulation & Antitrust Policy
Drake University, Spring 2015
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Signature: _____

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TEST 12 VERSION A
"Regulation and Deregulation of Telecommunications"

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.

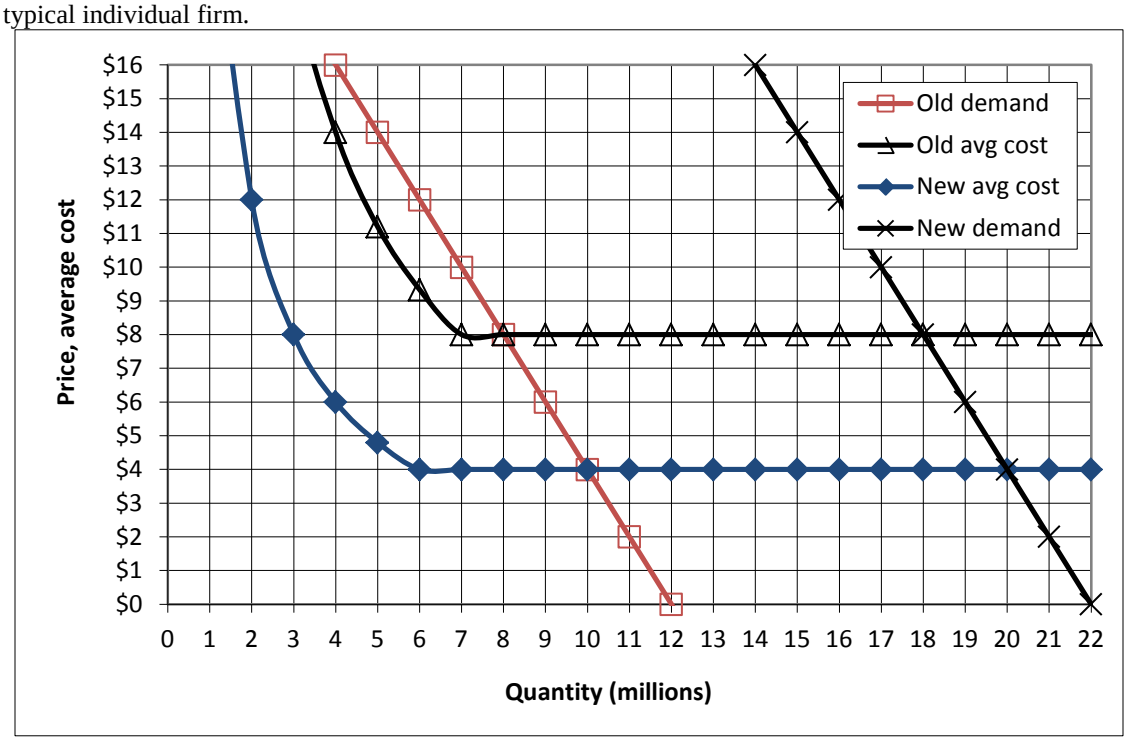
I. Problems: Insert your answer to each question below in the box provided. Feel free to use the margins for scratch work—only the answers in the boxes will be graded. Work carefully—partial credit is not normally given for questions in this section.

(1) [Legal cases and decisions: 12 pts] Which legal case or FCC decision had the impact listed below?

- Hush-a-Phone Corp v. FCC (1956)
- FCC's "Computer Inquiry II" (1980)
- Modified Final Judgement (1982)
- FCC's "Specialized Common Carrier" decision (1971)

Impact	Legal case or FCC decision
a. Allowed customers to connect their own devices to AT&T's telephones.	
b. Required AT&T to set up an unregulated subsidiary to sell and lease telephones, in direct competition with other companies.	
c. Required AT&T to divest local phone companies.	
d. Permitted free entry into the market for private-line service.	

(2) [Transformation of natural monopoly: 25 pts] The graph below shows industry demand and average cost curves for a typical individual firm.



Suppose the average cost curve for a typical firm is given by "Old avg cost" and demand is given by "Old demand."

a. What is the minimum efficient scale? _____ million

b. [4 pts] Is this industry a natural monopoly? Why or why not?

First suppose the demand curve shifts to "New demand" as a result of rising incomes.

c. Is this industry still a natural monopoly? Answer *yes* or *no*. _____

Alternatively, suppose demand does not shift, but the average cost curve for a typical firm falls to "New avg cost."

d. What is now the minimum efficient scale? _____ million

e. Is this industry still a natural monopoly? Answer *yes* or *no*. _____

Now suppose the demand curve and the average cost curve both shift. Assume that firms in this industry engage in price competition and there is free entry and exit.

f. What will be the equilibrium market price? $ _____

g. What will be the equilibrium market quantity? _____ million

h. What is the maximum number of firms that this industry can support under price competition? _____ firms

(2) [Multiproduct cost functions: 32 pts] Spike's Barbeque serves two items: bratwursts and hamburgers. Let Q_B denote the quantity of bratwursts, and let Q_H denote the quantity of hamburgers. The total cost $C(Q_B, Q_H)$ of producing the products at various levels of output are given by the following table.

$C(Q_B,Q_H)$		Q_H				
		0	10	20	30	40
Q_B	0	\$0	\$63	\$146	\$237	\$335
	10	\$48	\$91	\$165	\$250	\$342
	20	\$109	\$144	\$215	\$297	\$387
	30	\$178	\$206	\$274	\$355	\$443
	40	\$251	\$274	\$340	\$419	\$506

a. Does Spike's Barbeque enjoy *economies of scope*? Why or why not? Give a numerical example.

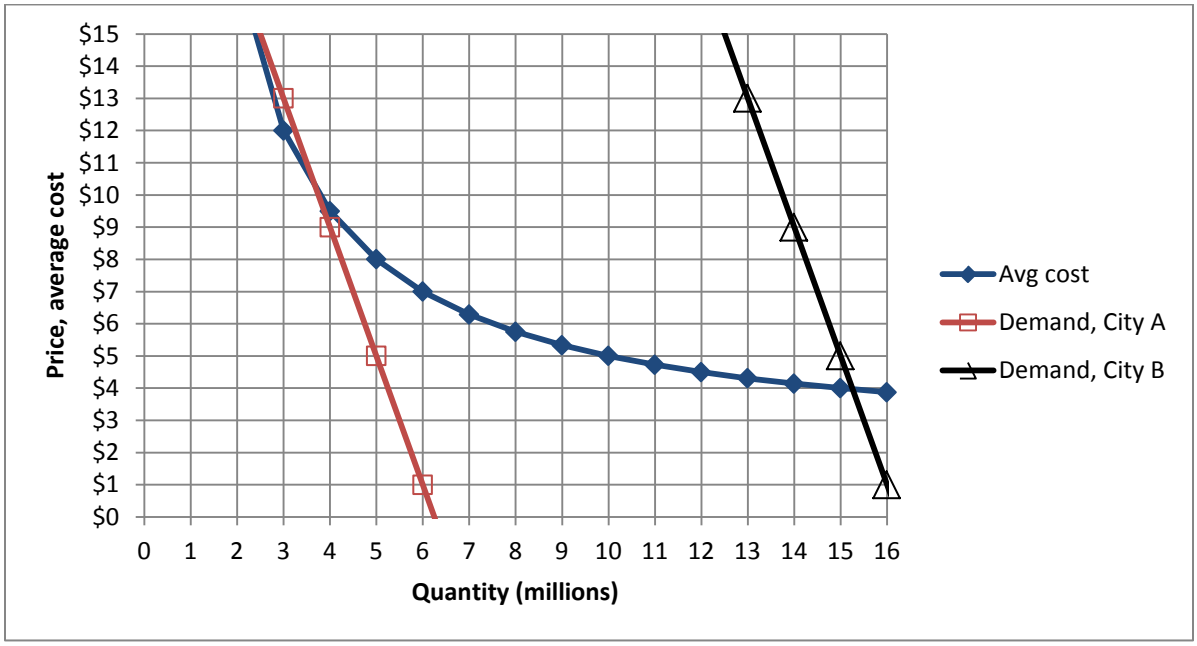
b. Compute the *incremental cost* of hamburgers, given that the firm will produce 30 bratwursts, and place your answers in the table below.

c. Compute the *average incremental cost* of hamburgers, given that Spike's Barbeque will produce 30 bratwursts, and place your answers in the table below. Round answers to the nearest cent.

Q_H	$IC(Q_H)$ given Q_B=30	$AIC(Q_H)$ given Q_B=30
10	\$	\$
20	\$	\$
30	\$	\$
40	\$	\$

d. Does Spike's Barbeque enjoy *product-specific economies of scale* for hamburgers? Why or why not?

(3) [Cross-subsidization: 20 pts] Suppose that Acme Communications, a regulated firm, operates in two cities with different demand curves, but with the same average cost curve in each city, as shown below.



a. Is Acme Communications a natural monopoly? Why or why not?

Suppose the regulator imposes a price of **$ 5** in both cities.

b. What quantity will be demanded in each city?

c. Will Acme Communications enjoy a *profit* or a *loss* in each city?

d. How much?

	City A	City B
	million	million
	$ million	$ million

Suppose another firm has an average cost curve that is $0.50 *higher* than Acme Communications' average cost curve shown in the graph above. Further suppose that the regulator permits free entry into both cities.

e. Will the other firm enter City A, City B, both cities or neither city? Why?

II. Critical thinking [11 pts]

Should the "essential facilities doctrine" of antitrust law still apply to any telecommunications companies? If so, which one(s), and why? If not, why not?

[end of quiz]