ECON 120 - Regulation & Antitrust Policy
Drake University, Spring 2026
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Signature: _____

Printed name: _____

EXAMINATION 1 VERSION A
"Review of Perfect Competition"
February 12, 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, 24 pts total]

(1) The purpose of price and entry regulation is primarily to
a. promote competition.
b. control monopoly.
c. limit externalities.
d. remedy problems of asymmetric information.

(2) "Positive analysis" of regulation asks
a. whether regulation is a "net plus" for society.
b. what regulatory policy should be.
c. why regulation occurs in some industries and not others.
d. All of the above.

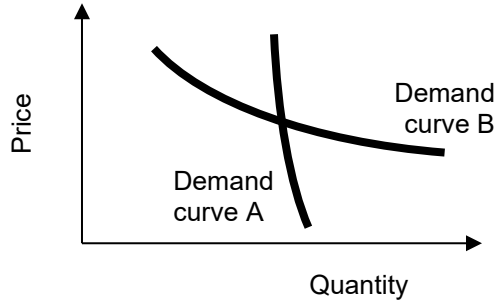
(3) A demand curve for bicycles shows how the quantity of bicycles people want to buy is affected by
a. the bicycle's features.
b. the income of consumers.
c. the price of bicycles.
d. the price of substitutes, like scooters.

(4) A supply curve for orange juice shows how the quantity of orange juice that producers want to produce and sell is affected by
a. the cost of inputs like oranges.
b. the price of orange juice.
c. the price of substitutes, like grapefruit juice.
d. environmental regulations.

(5) Some people believe there is excess supply in the commercial real estate market. If they are right, then the price of commercial real estate can be expected to
a. rise.
b. fall.
c. remain constant.
d. Price movements are not related to excess supply.

(6) Equilibrium in a competitive market occurs when
a. the price is affordable to most people.
b. the revenue received by sellers is maximized.
c. the price is zero.
d. the quantity demanded equals the quantity supplied.

(7) Which demand curve below is *more* elastic?
a. Demand curve A.
b. Demand curve B.
c. Both have the same elasticity because they pass through the same point.
d. Cannot be determined from information given.



(8) A good that has close substitutes will likely have a price elasticity of demand that is
a. small, in absolute value.
b. large, in absolute value.
c. zero.
d. infinite.
e. cannot be determined.

(9) The increase in a firm's total revenue from producing and selling one more unit of output by definition equals the firm's
a. total revenue.
b. average revenue.
c. marginal revenue.
d. total cost.
e. average cost.
f. marginal cost.

(10) The change in a firm's total cost divided by the change in its output by definition equals the firm's
a. total revenue.
b. average revenue.
c. marginal revenue.
d. total cost.
e. average cost.
f. marginal cost.

(11) A firm's total cost divided by its total output by definition equals the firm's
a. total revenue.
b. average revenue.
c. marginal revenue.
d. total cost.
e. average cost.
f. marginal cost.

(12) All money paid by a firm for inputs equals by definition the firm's
a. total revenue.
b. average revenue.
c. marginal revenue.
d. total cost.
e. average cost.
f. marginal cost.

(13) If a firm takes price as given, its marginal revenue is
a. equal to the price of its output.
b. less than the price of its output.
c. equal to its total revenue.
d. less than its average revenue.

(14) To maximize profit, a firm should choose an output level where
a. marginal revenue is as high as possible above marginal cost.
b. marginal revenue equals marginal cost.
c. total revenue equals total cost.
d. average revenue equals average cost.

(15) A firm's *breakeven* price is the
a. lowest point on its total cost curve.
b. highest point on its total revenue curve.
c. lowest point on its average cost curve.
d. the average height of its marginal cost curve.

(16) In the *short run*, a firm should continue operating if its revenue is sufficient to pay at least its
a. fixed cost.
b. variable cost.
c. total cost.
d. accounting cost.

(17) New firms enter an industry because they hope to
a. drive down the market price.
b. drive down the profits of existing firms.
c. enjoy economic profit.
d. increase consumer surplus.

(18) *Price equals average cost* in a competitive industry in long-run equilibrium because
a. business owners have a sense of fairness.
b. individual firms adjust their output levels using the rule "price equals average cost" to maximize profit.
c. consumers refuse to pay more than what is reasonable.
d. positive profits encourage entry of new firms while negative profits encourage existing firms to leave the industry.
e. the threat of government regulation causes firms to hold prices down.

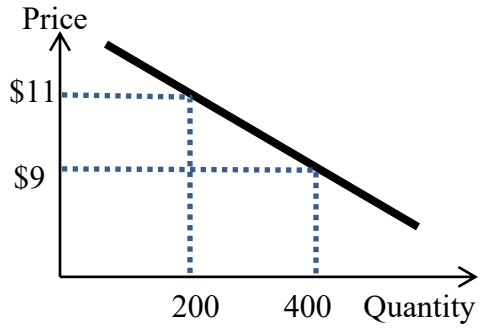
(19) At any point on the demand curve for ice cream, the height of the demand curve equals
a. consumer surplus on that pint of ice cream.
b. consumers' willingness to pay for that pint of ice cream.
c. marginal cost of producing that pint of ice cream.
d. producer surplus on that pint of ice cream.

(20) At any point on the supply curve for wheat, the height of the supply curve equals
a. consumer surplus on that bushel of wheat.
b. consumers' willingness to pay for that bushel of wheat.
c. marginal cost of producing that bushel of wheat.
d. producer surplus on that bushel of wheat.

(21) Suppose there is a change in government policy affecting the health care industry. Which of the following outcomes would be a *Pareto improvement*?
a. Producers gain $20 billion while consumers lose $10 billion.
b. Producers gain $10 billion while consumers gain $20 billion.
c. Producers gain $10 billion while consumers lose $20 billion.
d. Both (a) and (b).
e. All of the above.

(22) A price floor (or legal minimum price) on bananas, if it were binding, would create
a. excess demand for bananas.
b. excess supply of bananas.
c. neither excess demand nor excess supply.
d. Cannot be determined from information given.

The next two questions refer to the following graph of the market for movie tickets.



(23) How much are consumers willing to pay for the 400th movie ticket?
a. zero.
b. $2.
c. $9.
d. $11.
e. $20.

(24) If the market price of movie tickets falls from $11 to $9, then total consumer surplus
a. decreases by $400.
b. decreases by $600.
c. decreases by $800.
d. increases by $400.
e. increases by $600.
f. increases by $800.

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) [Using price elasticity of demand: 10 pts] Suppose the price elasticity of demand for laundry detergent is **-0.8**. Suppose laundry soap producers cooperate to **decrease output by 4%.** Assume the demand curve does not shift.

a. Is demand for laundry soap elastic, inelastic, or unitary-elastic?	
b. Will the price of laundry soap *increase or decrease*?	
c. ... by about how much?	%
d. Will revenue received by laundry soap producers *increase or decrease?*	
e. ... by about how much?	%

(2) [Profit maximization: 10 pts] Suppose a firm's total revenue function is given by $TR(q) = 5q$, and its total cost function is given by $TC(q) = (1/100)\, q^2 + q$. Find the following, showing your work and circling your final answers.

a. Find the firm's marginal revenue function $MR(q)$.

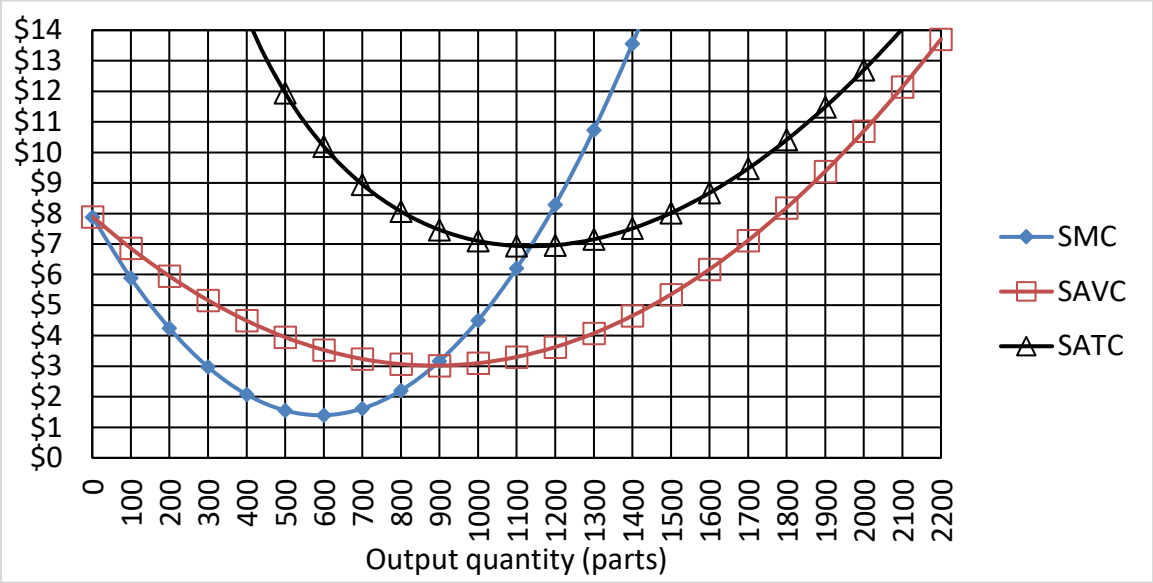
b. Given the information above, can we infer that this firm takes price as given? Why or why not?

c. Find the firm's marginal cost function $MC(q)$.

d. Compute the firm's profit-maximizing level of output q*. Show your work and circle your final answer.

e. Compute the firm's total profit. Show your work and circle your final answer.

(3) [Short-run cost curves and supply: 24 pts] XYZ Manufacturing Company makes a small part used in trucks. XYZ is a small company in a big market, and therefore takes its output price as given. In the short run, the company faces daily cost curves as shown in the following diagram. Here, SMC denotes short-run marginal cost, SAVC denotes short-run average variable cost, and SATC denotes short-run average total cost.



Suppose the company were currently producing 500 parts for some unknown reason.

a. Compute the company's short-run total cost, to the nearest thousand dollars. $ thousand

b. Compute the company's short-run variable cost, to the nearest thousand dollars. $ thousand

c. Compute the company's short-run fixed cost, to the nearest thousand dollars. $ thousand

d. Suppose the company were currently producing 300 parts for some unknown reason. If the company produced one more part, by how much would its total cost increase? That is, what would be the *change in total cost* as the company increased output from 300 to 301 parts? (Give an answer to the nearest dollar.) $

e. What is the company's break-even price—that is, the lowest price at which the company can avoid losses? (Give an answer to the nearest dollar.) $

f. What is the company's shut-down price—that is, the lowest price at which it will remain in operation in the short run? (Give an answer to the nearest dollar.) $

g. Suppose the price of parts is $2. How many parts should the company produce? (Give an answer to the nearest hundred.) parts

h. Will the company make a *profit* or a *loss* at a price of $2?

i. Suppose the price of parts is $6. How many parts should the company produce? (Give an answer to the nearest hundred.) parts

j. Will the company make a *profit* or a *loss* at a price of $6?

k. Suppose the price of parts is $11. How many parts should the company produce? (Give an answer to the nearest hundred parts

l. Will the company make a *profit* or a *loss* at a price of $11?

(4) [Long-run cost and supply: 10 pts] Suppose XYZ Manufacturing Company has the following long-run cost function:

$$TC(q) = 0.01\,q^3 - 0.8\,q^2 + 26\,q$$

a. Find an expression for the company's marginal cost function.

MC(q) =

b. Find an expression for the company's average cost function.

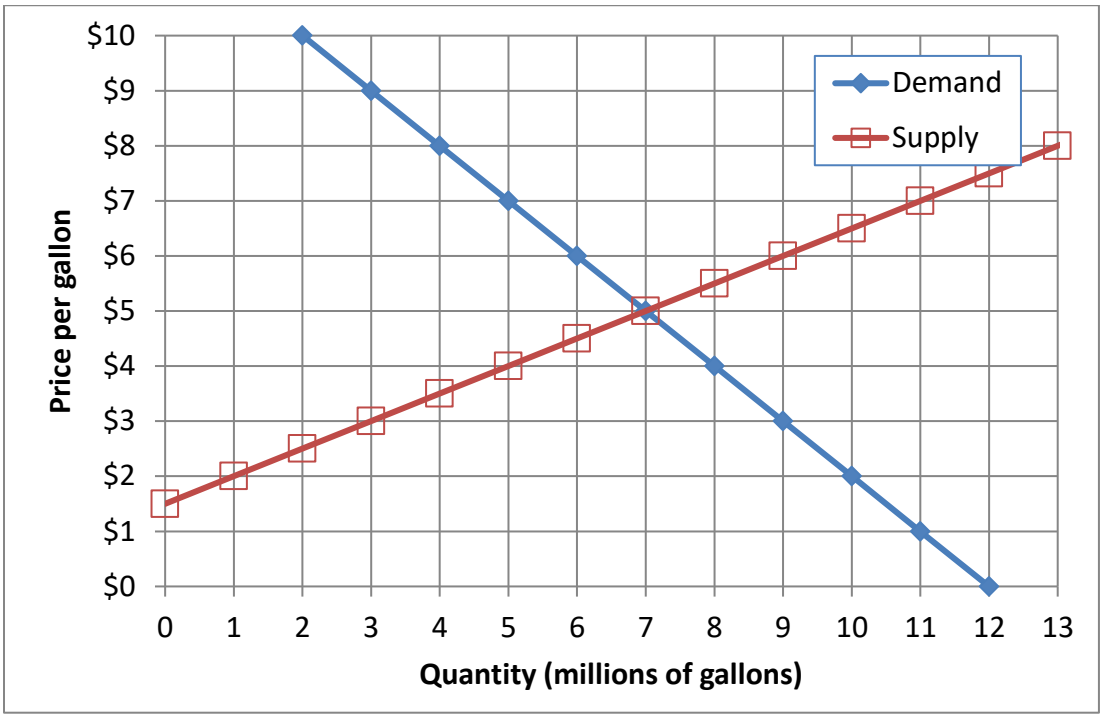
AC(q) =

c. Compute the company's efficient scale q_{ES}. Show your work and circle your final answer.

d. Compute the company's breakeven price—the minimum price at which it can avoid losses. Show your work and circle your final answer.

e. Suppose all firms in this industry have these same costs. If the market price is **$5**, will new firms try to *enter* the industry, or will existing firms try to *exit* the industry? Why?

(5) [Welfare analysis of market controls: 18 pts] The following graph shows the market for milk.



a. Find the equilibrium price without government intervention.

$

Suppose the government imposes a price ceiling (or legal maximum price) of **$ 4 per gallon**. No milk may be sold for a price more than the price ceiling.

b. How much milk will actually be sold?	million gallons
c. Will there be *excess demand, excess supply*, or *neither*?	
d. How much?	million gallons
e. Does producer surplus *increase, decrease,* or *remain constant* because of the price ceiling, as compared to the market without government intervention?	
f. By how much?	$ million
g. Does consumer surplus *increase, decrease,* or *remain constant* because of the price ceiling, as compared to the market without government intervention? (Assume optimistically that milk is purchased by those consumers who have the highest willingness-to-pay.)	
h. By how much?	$ million
i. Compute the deadweight social loss caused by the price ceiling.	$ million

III. Critical thinking: Write a one-paragraph essay answering *one* question below (your choice). [4 pts]

(1) You are the CEO of a software company. You make a unique product, so you have a monopoly, and your marketing manager reports that your elasticity of demand is about -2. You have hired two consultants to recommend a pricing policy that will increase your revenue. Consultant #1 says you should *raise your price*. "You are a monopoly, so you can take advantage of that fact to build revenue," she says. Consultant #2 says you should *lower your price*. "The way to increase revenue is to expand the market for your product," she says. Who is right? Justify your answer. (Ignore the graph below.)

(2) Consider the following statement. "To maximize profit, a business should keep its costs as low as possible. So it should always operate at the output level where its average cost is lowest, regardless of the product price." Do you agree or disagree? Justify your answer using a graph of the business's cost curves. Label both axes and all curves.

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]