ECON 120 - Regulation & Antitrust Policy
Drake University, Spring 2019
William M. Boal

Signature: _____

Printed name: _____

EXAMINATION 1 VERSION B
"Review of Perfect Competition"

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, 34 pts total]

(1) In the U.S., antitrust laws are *not* enforced at the federal level by
a. Department of Commerce.
b. Department of Justice.
c. Federal Trade Commission.
d. All of the above enforce antitrust laws.

(2) 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.

(3) In some industries, prices and the entry of new firms are regulated by
a. the Department of Justice.
b. the Federal Trade Commission.
c. various regulatory agencies.
d. the Department of Commerce.

(4) "Normative analysis" of price and entry regulation asks
a. what rules or norms regulators tend to follow.
b. what regulatory policy should be.
c. why regulation occurs in some industries and not others.
d. which direction regulation is trending.

(5) A decrease in the price of oranges will
a. shift the demand curve for oranges to the right.
b. shift the demand curve for oranges to the left.
c. rotate the demand curve for oranges so that it becomes steeper.
d. rotate the demand curve for oranges so that it becomes flatter.
e. None of the above.

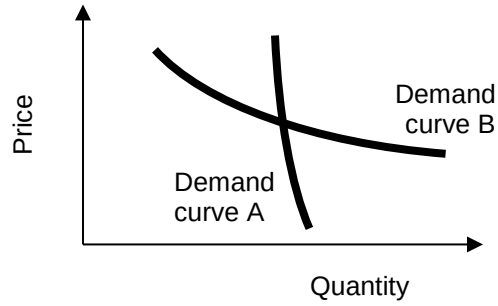
(6) A fall in the price of Android smart phones will shift the demand for Apple iPhones to the left, since Android phones and iPhones are
a. normal goods.
b. inferior goods.
c. complementary goods.
d. substitute goods.

(7) Spaghetti sauce is made from tomatoes, so if the price of tomatoes falls, then the
a. supply of spaghetti sauce will shift right.
b. supply of spaghetti sauce will shift left.
c. demand for spaghetti sauce will shift right.
d. demand for spaghetti sauce will shift left.

(8) If a new, more efficient method for growing rice is developed, then
a. supply of rice will shift right.
b. supply of rice will shift left.
c. demand for rice will shift right.
d. demand for rice will shift left.

(9) Excess supply in the market for cars would occur if the actual price of cars were
a. greater than the equilibrium price.
b. less than the equilibrium price.
c. too close to the equilibrium price.
d. cannot be determined from the information given.

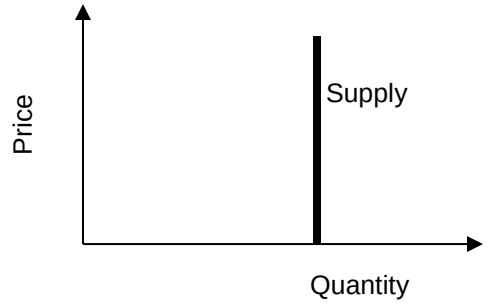
(10) Which demand curve below is *more* elastic?
a. Demand curve A.
b. Demand curve B.
c. Both have the same elasticity because they pass through the same point.
d. Cannot be determined from information given.



(11) A good that has no 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.

(12) Suppose the price elasticity of demand for bacon is about – 2. If the price of bacon rises, then the amount of money consumers spend on bacon will
a. increase.
b. decrease.
c. remain constant.
d. cannot be determined from information given.

(13) The supply curve in the graph below is
a. perfectly elastic.
b. perfectly inelastic.
c. unitary elastic.
d. Cannot be determined from information given.



(14) If a firm is making zero economic profit,
a. it will likely soon shut down.
b. its workers cannot be paid.
c. it is making a negative accounting profit.
d. it is enjoying a normal rate of return on investment.

(15) The increase in cost caused by the last unit of output is called
a. average cost.
b. unit cost.
c. marginal cost.
d. marginal revenue.

(16) If at a certain level of output, marginal cost is *greater than* average cost, then the average cost curve must be
a. upward-sloping.
b. downward-sloping.
c. at its minimum point.
d. Cannot be determined from information given.

(17) Marginal revenue is defined as
a. the slope of the total revenue curve.
b. $\Delta TR / \Delta Q$.
c. the increase in revenue from the last unit of output.
d. change in revenue divided by change in output quantity.
e. any of the above.

(18) At its current level of output, ABC Company's marginal cost is $7, its average cost is $10, and its marginal revenue is $15. If ABC produces and sells one more unit of output, its profit will
a. increase by $3.
b. increase by $5.
c. increase by $8.
d. increase by $15.
e. remain constant.

(19) A cost that you cannot avoid no matter what action you take is called
a. a sunk cost.
b. an average cost.
c. an opportunity cost.
d. a marginal cost.
e. a variable cost.

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

(21) Efficiency in production requires that all firms in the same industry
a. have equal marginal cost.
b. have equal total cost.
c. have equal levels of output.
d. have equal average cost.
e. All of the above.

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

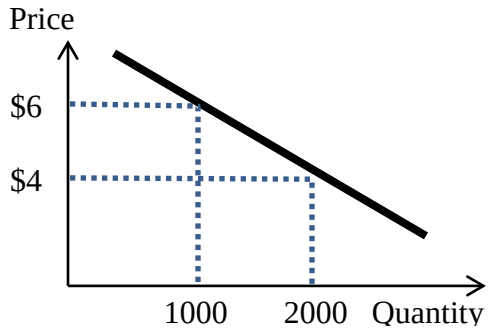
(23) When firms *exit* an industry, this has the effect of shifting the short-run supply curve
a. to the right.
b. to the left.
c. down.
d. Cannot be determined from information given.

(24) *Price equals marginal cost* in a competitive industry in both short-run equilibrium and long-run equilibrium because
a. business owners have a sense of fairness.
b. individual firms adjust their output levels using the rule "price equals marginal 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.

(25) Alyson is willing to pay $500 for a smart phone, but fortunately the price is only $200. If she buys a smart phone, her consumer surplus is
a. zero.
b. $200.
c. $300.
d. $500.
e. $800.

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

(27) The graph below shows the demand for sandwiches. If the market price of sandwiches rises from $4 to $6, then total consumer surplus
a. increases by $2000.
b. increases by $3000.
c. increases by $4000.
d. decreases by $2000.
e. decreases by $3000.
f. decreases by $4000.



(28) Suppose there is a change in government policy affecting the automobile industry. Which of the following outcomes would pass the *compensation test of Kaldor and Hicks*?
a. Producers gain $10 billion while consumers lose $20 billion.
b. Producers gain $20 billion while consumers lose $10 billion.
c. Producers gain $10 billion while consumers gain $20 billion.
d. Both (b) and (c).
e. All of the above.

(29) Suppose for some reason that the quantity traded in the market for cupcakes is 10 million cupcakes, but the market is not in equilibrium. Rather, at this quantity, the height of the supply curve is $1 and the height of the demand curve is $3. Then producing one more cupcake would
a. increase social welfare by $2.
b. decrease social welfare by $3.
c. increase social welfare by $5.
d. decrease social welfare by $2.
e. Cannot be determined without knowing the equilibrium price.

(30) A perfectly competitive firm expects that if it increases its output, this will cause the price to
a. increase.
b. decrease.
c. stay the same.
d. cannot be determined from information given.

(31) Suppose the market elasticity of demand for in a particular industry equals -5. Firm X's market share is 5% (or 0.05). Assuming other firms do not change their levels of output, then Firm X perceives an elasticity of demand equal to
a. -0.04.
b. -5.
c. -20.
d. -100.
e. -125.

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

(33) A quota on sellers of baseball bats would have basically the same effect on the market for baseball bats as
a. a subsidy for baseball bats.
b. a free market for baseball bats.
c. a price ceiling on baseball bats.
d. a price floor on baseball bats.
e. a tax on baseball bats.

(34) A firm that enjoys economies of scale has an average cost curve that
a. is horizontal.
b. is vertical.
c. slopes up.
d. slopes down.

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 doughnuts is **-1.2**. Suppose doughnut producers cooperate to decrease output by 6%. Assume the demand curve does not shift.

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

(2) [Profit maximization: 10 pts] Suppose a firm's total revenue function is given by $TR(q) = 4q$, and its total cost function is given by $TC(q) = 0.01\ q^2 + 2\ q$. Find the following, showing your work and circling your final answers.

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

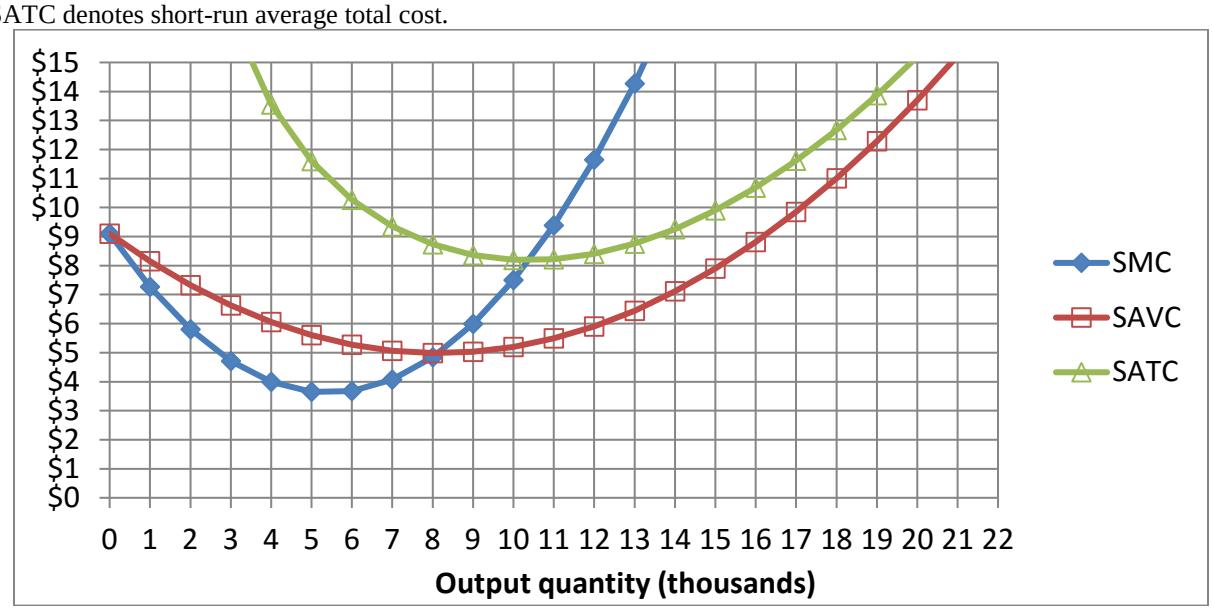
b. Does this firm take price as given? Why or why not?

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] General Products Company is a small firm in a big market, and therefore takes its output price as given. In the short run, the company faces weekly 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 15 thousand units of output, for some unknown reason.

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

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

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

Suppose the company were currently producing 2 thousand units of output, for some unknown reason.

d. If the company produced one more unit, by how much would its total cost increase? That is, what would be the *change in total cost* as the company increased output from 2000 to 2001 units? (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 output is $4. How many units will the company produce? thousand

h. Will the company make a *profit* or a *loss* at a price of $4, or will it *break even?*

i. Suppose the price of output is $12. How many units will the company produce? thousand

j. Will the company make a *profit* or a *loss* at a price of $12, or will it *break even?*

k. Suppose the price of output is $6. How many units will the company produce? thousand

l. Will the company make a *profit* or a *loss* at a price of $6, or will it *break even?*

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

$$TC(q) = 0.01\ q^3 - 0.8\ q^2 + 28\ q$$

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

$MC(q) =$

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

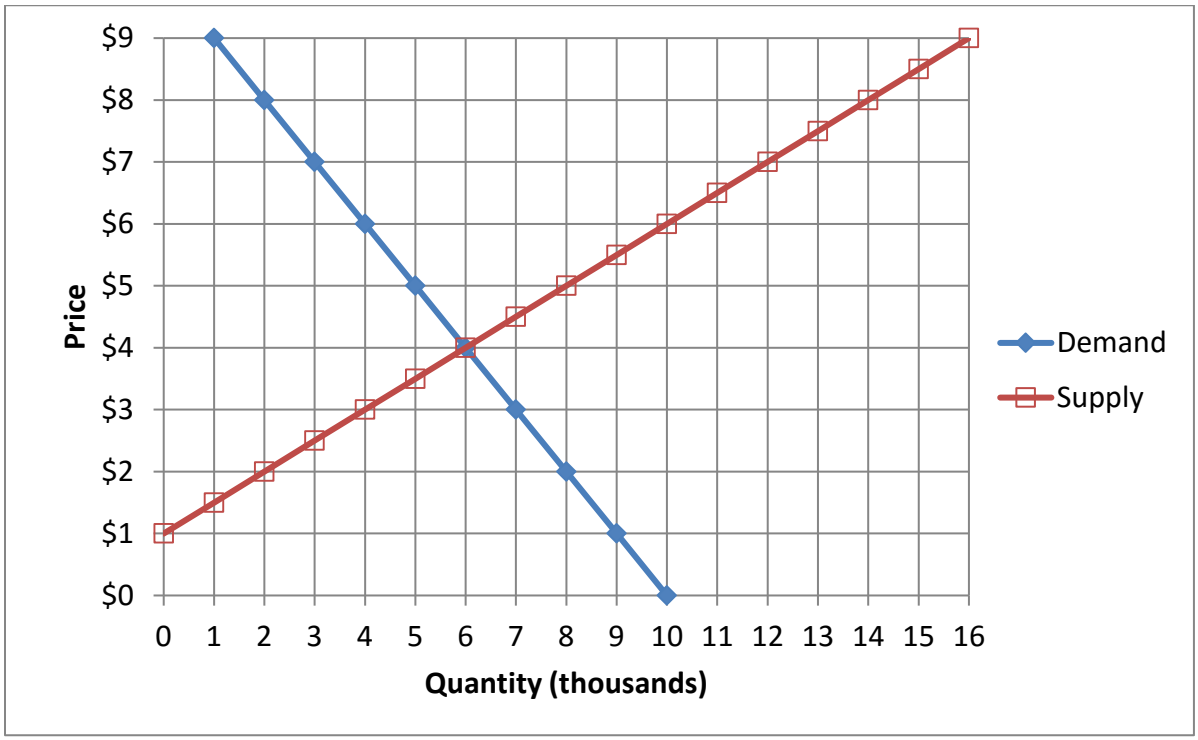
$AC(q) =$

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 **$15**, will new firms try to *enter* the industry, or will existing firms try to *exit* the industry? Why?

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



a. Find the equilibrium price without government intervention. $

Suppose the government imposes a price floor (or legal minimum price) of **$ 6** per pound. No artichokes may be sold for a price less than the price floor.

b. How many pounds of artichokes will actually be sold? thousand

c. Will there be *excess demand*, *excess supply*, or *neither*?

d. How much? thousand

e. Does producer surplus *increase*, *decrease*, or *remain constant* because of the price floor, as compared to the market without government intervention? (Assume optimistically that artichokes are sold by those producers with the lowest cost.)

f. By how much? $ thousand

g. Does consumer surplus *increase*, *decrease*, or *remain constant* because of the price floor, as compared to the market without government intervention?

h. By how much? $ thousand

i. Compute the deadweight social loss caused by the price floor. $ thousand

III. Critical thinking: Write a one-paragraph essay answering *one* question below (your choice). Full credit requires correct economic reasoning, legible writing, good grammar including complete sentences, and accurate spelling. [4 pts]

(1) Suppose you operate a lawn-mowing business in a competitive market, where everyone charges about $20 for an average-size lawn. You know that on the one hand you can easily expand your business if you just post a few signs, and on the other hand you can easily downsize your business by not replacing customers as they drop off. In other words, you can take the price of $20 as given. You review your costs to decide what to do. You discover that your average cost per lawn is about $10, but your marginal cost per lawn is about $30. Should you expand your business, downsize it, or neither? Justify your answer.

(2) Suppose that when the *price* of gasoline falls by 10 percent, consumer *spending* on gasoline falls by 6 percent.
a. According to these figures, is demand for gasoline *elastic* or *inelastic* ?
b. Compute the price elasticity of demand for gasoline. Show your work and circle your final answer.

[end of exam]