ECON 002 - Principles of Microeconomics Signature: _____
Drake University, Fall 2018
William M. Boal Printed name: _____

EXAMINATION 1 VERSION A
"Competitive Supply and Demand"
September 19, 2018

INSTRUCTIONS: This exam is closed-book, closed-notes. Simple calculators are permitted, but graphing calculators, calculators with alphabetical keyboards, cell phones, and wireless devices are NOT permitted. Numerical answers, if rounded, must be correct to at least 3 significant digits. Point values for each question are noted in brackets. Maximum total points are 100.

I. Multiple choice: Please circle the one best answer to each question. [1 pt each, 14 pts total]

(1) The assumption in economics that people are *rational* implies that people
a. do the best they can with what they have.
b. make sacrifices today for a better future.
c. maximize their income.
d. use math to make decisions.
e. ignore "soft" concerns like friendships and charity.

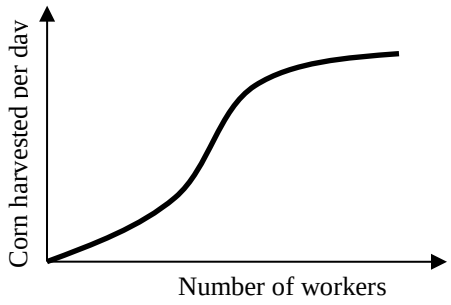
(2) Suppose that your top activity choices this evening are to go to a concert or to have dinner with friends, but you do not have time for both. Then missing the concert would be your _____ of having dinner with friends.
a. equilibrium cost.
b. sunk cost.
c. opportunity cost.
d. marginal cost.

(3) In economics, an *equilibrium* is a situation where
a. inflation equals zero percent.
b. economic growth is zero.
c. total costs equal total benefits.
d. no one wants to change their choices.

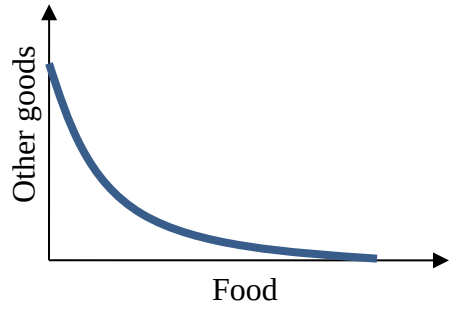
(4) "A tax cut should be enacted" is an example of
a. a positive statement.
b. a normative statement.
c. both of the above.
d. none of the above.

(5) Economic or physical capital includes
a. trucks and machines.
b. mortgage-backed securities.
c. bank accounts.
d. shares of stock in public corporations.
e. all of the above.

(6) Consider the production function shown below. As more labor is used, the marginal product of labor
a. decreases.
b. increases.
c. first increases, then decreases.
d. remains constant.



The next two questions refer to the following graph of a country's production-possibility curve.



(7) By definition, what is held constant along this production-possibility curve?
a. The prices of food and other goods.
b. Output of food.
c. Output of other goods.
d. The country's total inputs.
e. None of the above.

(8) As more food is produced, the opportunity cost of the last unit of food
a. remains constant.
b. decreases.
c. increases.
d. first increases, then decreases.

(9) Monetary exchange is more common today than bartering because
a. bartering is a lost art.
b. monetary exchanges are subject to less tax.
c. bartering requires a "double coincidence of wants."
d. bartering is often illegal whereas anything can be legally bought and sold with money.

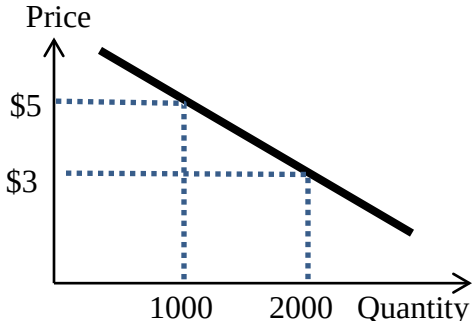
(10) If a market is characterized by *price dispersion*, then
a. buyers and sellers are each seeking their own preferred prices.
b. the market is not functioning efficiently.
c. a variety of prices are being generated by the market to suit every need.
d. monetary prices are disappearing as the market returns to a barter system.

(11) The *law of demand* means that
a. the quantity that buyers want to buy is negatively related to the price.
b. demand curves must be straight lines.
c. anything consumers want will be produced.
d. if buyers want something, they will pay whatever price is demanded by sellers.

(12) A fall in the in the price of chips will shift the demand for salsa to the right, assuming chips and salsa are
a. complementary goods.
b. substitute goods.
c. normal goods.
d. inferior goods.

(13) In summer, the price of blueberries decreases and the quantity sold increases. This could be caused by a
a. rightward shift in the demand for blueberries.
b. rightward shift in the supply for blueberries.
c. leftward shift in the demand of blueberries.
d. leftward shift in the supply of blueberries.

(14) The graph below shows the demand for sandwiches. If the market price of sandwiches rises from $3 to $5, then total consumer surplus
a. decreases by $2000.
b. decreases by $3000.
c. decreases by $4000.
d. increases by $2000.
e. increases by $3000.



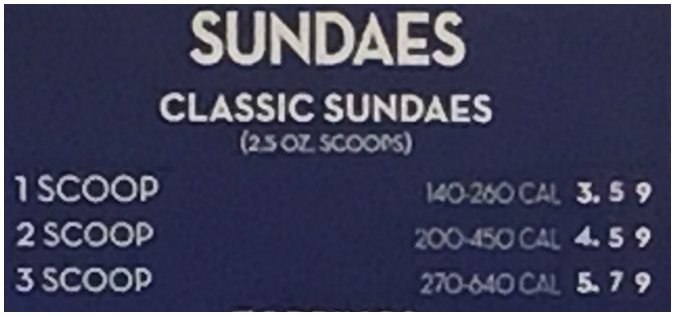
II. Problems: Insert your answer to each question in the box provided. Use margins and graphs for scratch work. Only the answers in the boxes will be graded. Work carefully—partial credit is not normally given for questions in this section.

(1) [Marginal cost: 6 pts] The picture at right shows prices of ice cream sundaes at Baskin-Robbins.

a. Compute the marginal cost of the first scoop of ice cream. $

b. Compute the marginal cost of the second scoop of ice cream. $

c. Compute the marginal cost of the third scoop of ice cream. $



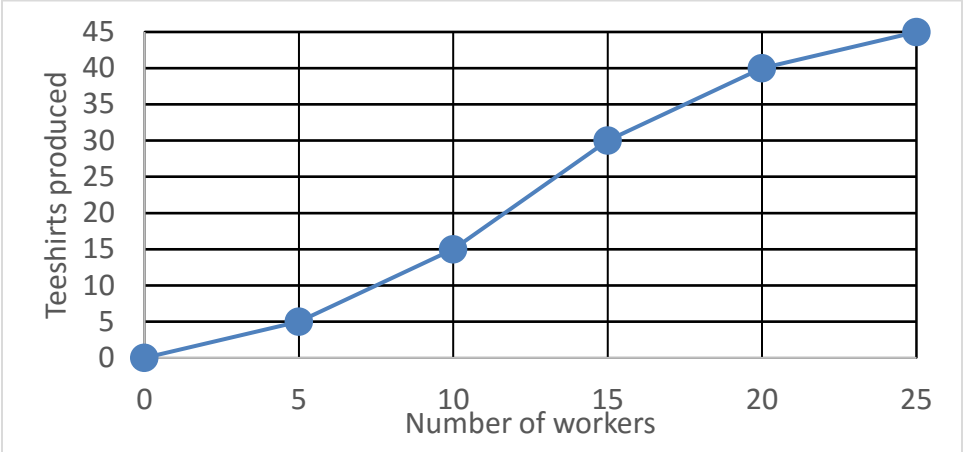
(2) [Percent change, midpoint formula: 2 pts] Suppose the average price of a hamburger in Des Moines is $4, and the average price in Chicago is $6. Compute the percent difference using the midpoint method. %

(3) [Percent change of product: 4 pts] A consumer's spending on gasoline equals the price paid times the quantity purchased. Suppose the price of gasoline increases by 6 percent and the quantity purchased decreases by 4 percent.

a. Does spending on gasoline *increase* or *decrease*?

b. By approximately how much? %

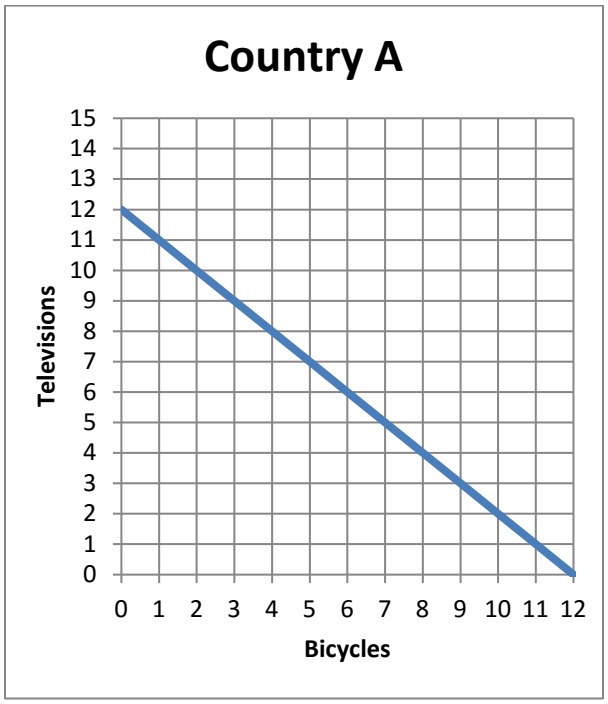
(4) [Production functions: 4 pts] Acme Teeshirt Company has the hourly production function shown below.

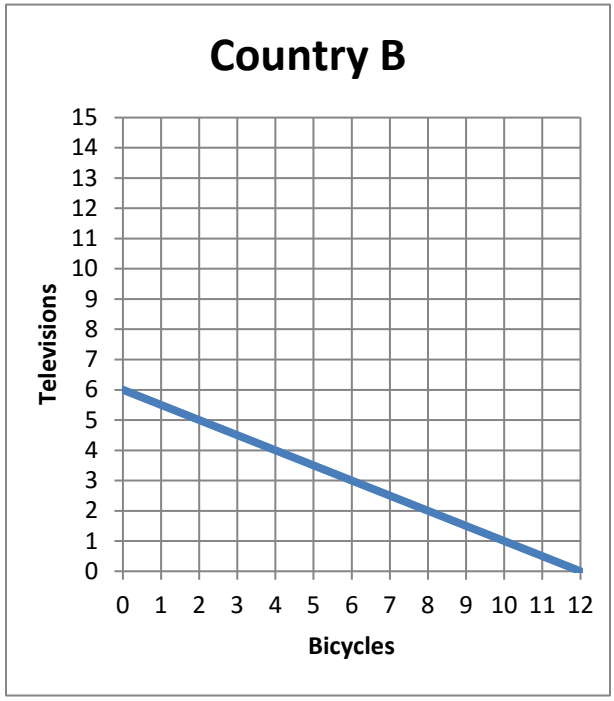


a. If the company employs 10 workers, what is their average product? shirts per worker

d. What is the marginal product of workers, as the number of workers increases from 10 to 15? shirts per worker

(5) [Comparative advantage, gains from trade: 17 pts] Country A and Country B can each produce televisions and bicycles. They each face a tradeoff between these two products because of limited workforces. Their production possibility curves are shown below.





a. What is Country A's opportunity cost of producing a television? bicycles

b. What is Country B's opportunity cost of producing a television? bicycles

c. What is Country A's opportunity cost of producing a bicycle? televisions

d. What is Country B's opportunity cost of producing a bicycle? televisions

e. Which country has a comparative advantage in producing televisions?

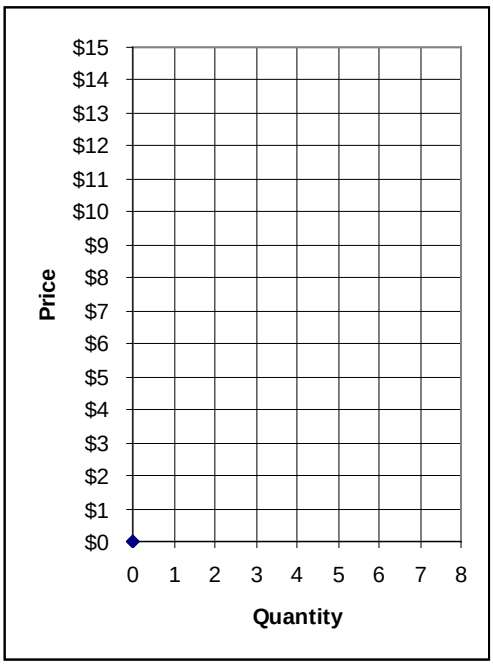
f. Which country has a comparative advantage in producing bicycles?

g. [3 pts] Fill in the blanks: *Both* countries can consume combinations of products *outside* their individual production possibility curves if _____ exports *three* bicycles to _____, which exports _____ televisions in return.

h. **Plot** the trade that you propose in part (g) on the graphs above. For each country, plot and label the starting point representing **production before trade**, and the ending point representing **consumption after trade**.

(6) [Market equilibrium: 12 pts] Suppose seven buyers and seven sellers engage in a market similar to the exercise we did in class. Each buyer may buy at most one unit and each seller may sell at most one unit, but no one is forced to trade. Assume that buyers and sellers are each trying to maximize their personal surplus (or "gains from trade"). Surplus for each buyer equals the buyer's value of the good minus the price paid. Surplus for each seller equals the price received minus the seller's cost of the good. Surplus of persons who do not trade are zero. Buyers' values and sellers' costs are given in the following table.

Buyer	*Value*	*Seller*	*Cost*
Bob	$14	*Sue*	$ 1
Barb	$13	*Steve*	$ 2
Ben	$12	*Sam*	$ 3
Bailey	$11	*Sven*	$ 4
Brian	$10	*Sarina*	$ 8
Brittany	$ 7	*Sam*	$12
Brandon	$ 4	*Sophia*	$14



Suppose with some experience, the market settles on a single price. All trades are made at that price. (You can use the graph at right for scratch work.)

a. If the price were $3, would there by *excess demand*, *excess supply*, or *neither*?

Now consider the market equilibrium.

b. What is the equilibrium price? Give an answer to the nearest whole dollar. $

c. How many units of the good will be sold in this market? units

d. Compute the total revenue received by sellers (which equals the total spending by buyers). $

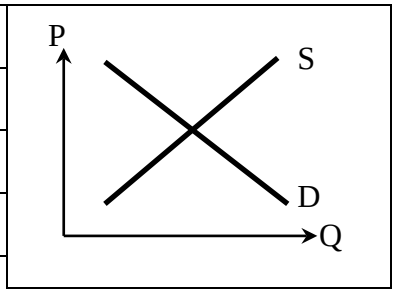
e. Compute the combined total surplus (or gains from trade) of all buyers and sellers. (Check your answer carefully! No partial credit for being "close"!) $

f. Who enjoys higher surplus in this particular market, the *buyers* or the *sellers?* Or is buyers' total surplus *equal* to sellers' total surplus?

(7) [Shifts in demand and supply: 15 pts] Analyze each of the following markets according to the accompanying imaginary scenario.

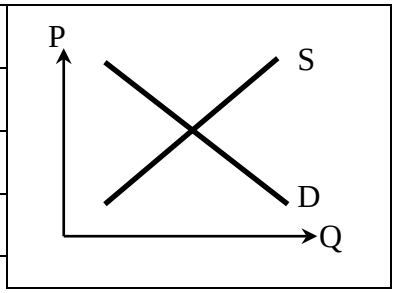
a. Consider the market for ***fish oil***: A new government report finds that consumption of fish oil prevents many diseases.

Does demand shift *left*, shift *right*, or remain *unchanged* ?
Does supply shift *left*, shift *right*, or remain *unchanged* ?
Does the equilibrium price *increase*, *decrease*, or *cannot be determined* ?
Does the equilibrium quantity *increase*, *decrease*, or *cannot be determined* ?
Sketch a graph of this scenario at right, showing which curve(s) shift(s).



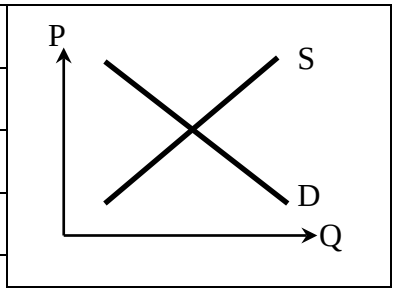
b. Consider the market for ***gasoline***. Suppose new government environmental regulations raise the cost of producing gasoline.

Does demand shift *left*, shift *right*, or remain *unchanged* ?
Does supply shift *left*, shift *right*, or remain *unchanged* ?
Does the equilibrium price *increase*, *decrease*, or *cannot be determined* ?
Does the equilibrium quantity *increase*, *decrease*, or *cannot be determined* ?
Sketch a graph of this scenario at right, showing which curve(s) shift(s).

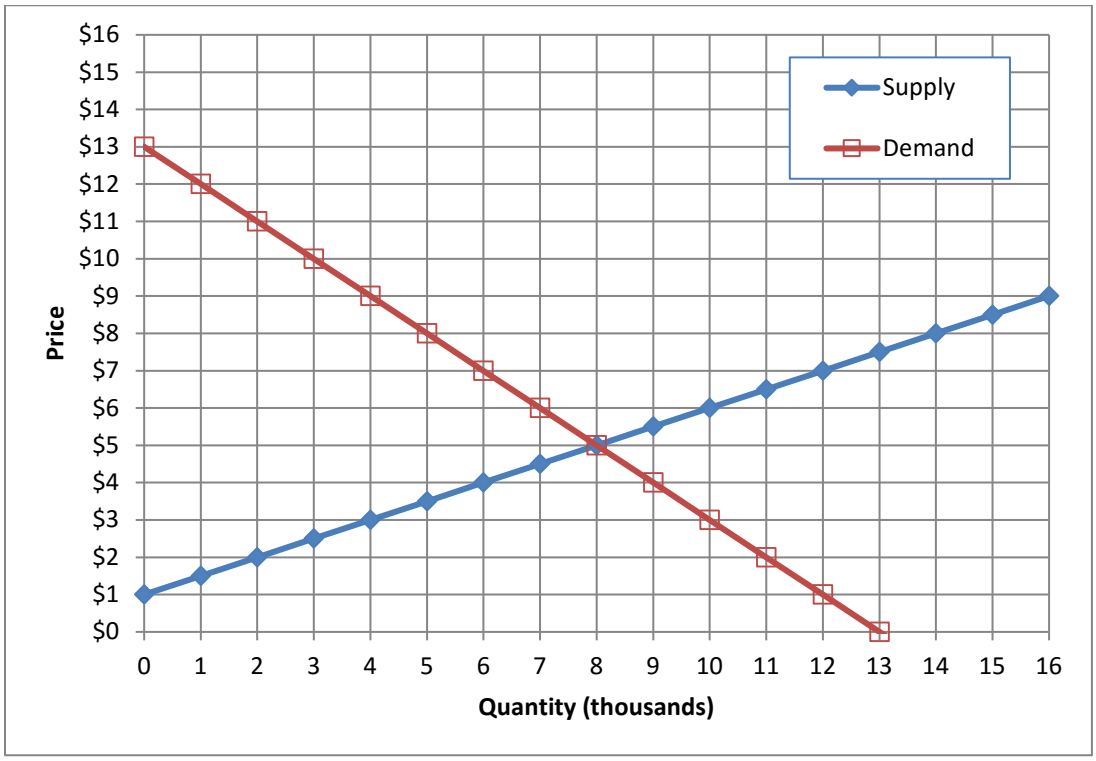


c. Consider the market for ***automobiles***: New technologies lower the cost of making autos. Simultaneously, a boom raises consumers' incomes.

Does demand shift *left*, shift *right*, or remain *unchanged* ?
Does supply shift *left*, shift *right*, or remain *unchanged* ?
Does the equilibrium price *increase*, *decrease*, or *cannot be determined* ?
Does the equilibrium quantity *increase*, *decrease*, or *cannot be determined* ?
Sketch a graph of this scenario at right, showing which curve(s) shift(s).



(8) [Consumer surplus, producer surplus: 22 pts] The market for pumpkins is depicted in the graph below.



Suppose the price in this market were $8 for some reason.

a. Would there be *excess demand*, *excess supply*, or *neither*?

b. How much?

c. Would the price tend to *rise*, *fall*, or remain *constant*?

	thousand

Now suppose the market is in equilibrium.

d. What is the equilibrium price?

e. What is the equilibrium quantity?

f. How much are consumers willing to pay for the 3 thousandth pumpkin?

g. How much consumer surplus do they enjoy for the 3 thousandth pumpkin?

h. What is the marginal cost to producers of the 6 thousandth pumpkin?

i. How much producer surplus do they enjoy for the 6 thousandth pumpkin?

j. Compute total consumer surplus.

k. Compute total producer surplus.

$	
	thousand
$	
$	
$	
$	
$	thousand
$	thousand

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

(1) Consider the following statement. "They are building too many hotels in this city. All the hotels will be half full, so they will raise their prices just to stay profitable. In the end, the consumer will suffer from higher prices." Does this argument make sense? Why or why not? Justify your answer using a supply-and-demand graph.

(2) An angry reader wrote to the Des Moines Register in August 2015: "The grocery stores are charging higher prices for eggs claiming a shortage because of the bird flu. So why is that every time I've been shopping that the shelves are all well stocked? You'd think if there really was a shortage the shelves would be empty, right? Someone's got some 'splaining to do." Use a supply-and-demand graph to "'splain" (explain) why, in a free market for eggs, bird flu does not result in empty shelves (that is, excess demand).

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]