ECON 002 - Principles of Microeconomics
Drake University, Fall 2022
William M. Boal

Signature: _____

Printed name: _____

EXAMINATION 1 VERSION C
"Competitive Supply and Demand"
September 21, 2022

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 write your name and "Version C" on your Scantron sheet. Then mark the one best answer to each question on the Scantron sheet. [1 pt each, 33 pts total]

(1) When we assume that people do the best they can with what they have, we are assuming that people are
a. "competitive."
b. "positive."
c. "rational."
d. "in equilibrium."

(2) In economics, a situation of scarcity is one where the available resources are insufficient
a. to provide for any saving.
b. to allow for economic growth.
c. to feed the entire population.
d. to give everyone their fair share.
e. to do everything one might want to do.

(3) Carl buys a ticket to a baseball game for $30. When he arrives at the ball park, he discovers that scalpers are willing to pay $70 for his ticket. His *opportunity cost* of attending the game is now
a. $30.
b. $40.
c. $70.
d. $100.

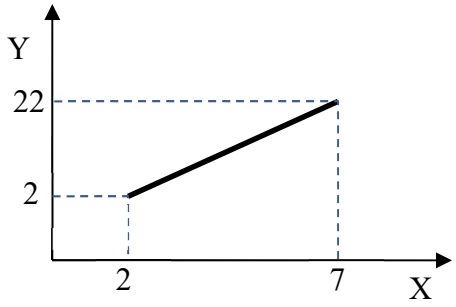
(4) Rational choice implies pursuing an activity until the marginal benefit of the last unit
a. begins to fall below its marginal cost.
b. is much less than its marginal cost.
c. is much greater than its marginal cost.
d. begins to exceed its marginal cost.

(5) 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.

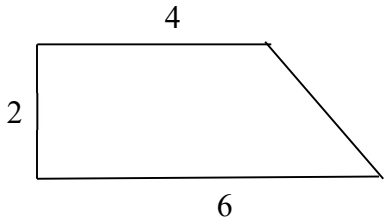
(6) "Rich people should pay more in taxes than poor people" is an example of
a. a positive statement.
b. a normative statement.
c. both of the above.
d. none of the above.

(7) Which of the following would most naturally be studied in *microeconomics* rather than macroeconomics?
a. Inflation.
b. Economic growth.
c. The cost of childcare.
d. Unemployment.

(8) In the graph below, the slope of the line segment equals
a. 1.
b. 2.
c. 3.
d. 4.
e. 5.
f. 6.



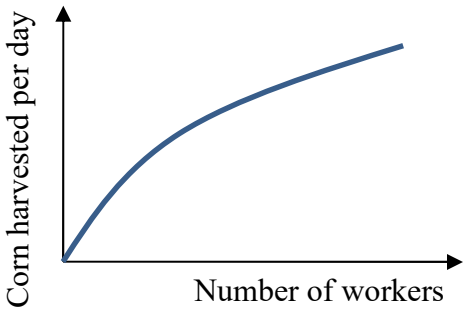
(9) The area of the trapezoid below equals
a. 8.
b. 10.
c. 15.
b. 48



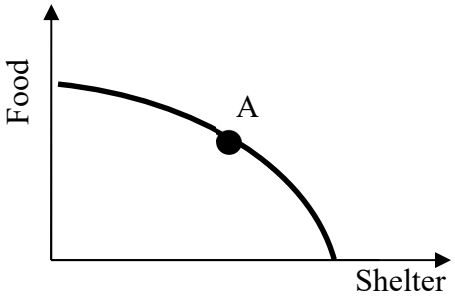
(10) Economic or physical capital includes
a. trucks and bulldozers.
b. machinery and equipment.
c. factories and office buildings.
d. all of the above.
e. none of the above.

(11) A curve that shows the relationship between inputs and outputs is called
a. a production function or total product curve.
b. an average cost or unit-cost curve.
c. a production-possibilities curve.
d. a supply curve.

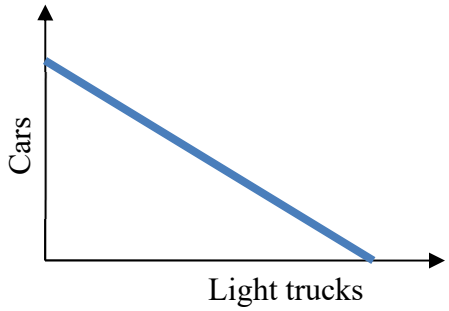
(12) Consider the production function shown below. As more labor is used, the marginal product of labor
a. decreases.
b. increases.
c. first increases, then decreases.
d. first decreases, then increases.
e. remains constant.



(13) The graph below shows the production possibility curve for some country. The combination of outputs represented by point A
a. is feasible and efficient.
b. is feasible but not efficient.
c. is infeasible.
d. cannot be determined from information given.



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



(14) By definition, what is held constant along this production-possibility curve?
a. Output of light trucks.
b. The factory's total inputs.
c. The prices of cars and trucks.
d. Output of cars.
e. None of the above.

(15) As more light trucks are produced, the opportunity cost of the last truck
a. remains constant.
b. decreases.
c. increases.
d. first increases, then decreases.

The next three questions refer to the following information. Farm A can produce 20 units of tomatoes or 40 units of peppers per acre. Farm B can produce 30 units of tomatoes or 90 units of peppers per acre.

(16) What is Farm A's opportunity cost of a unit of tomatoes?
a. 1 unit of peppers.
b. 2 units of peppers.
c. 20 units of peppers.
d. 2 units of tomatoes.

(17) What is Farm B's opportunity cost of a unit of tomatoes?
a. 3 units of peppers.
b. 30 units of peppers.
c. 60 units of peppers.
d. 30 units of tomatoes.

(18) Which farm has a comparative advantage in tomatoes?
a. Farm A.
b. Farm B.
c. Both farms.
d. Neither farm.

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

(20) An efficient well-functioning market
a. generates a variety of prices from which buyers and sellers may choose.
b. converges to a price such that consumer surplus equals producer surplus.
c. ensures that every potential buyer and seller makes a trade.
d. obeys the law of one price.
e. all of the above.

(21) **A** demand curve for sweatshirts shows how the quantity of sweatshirts people want to buy is affected by
a. the price of sweatshirts.
b. the price of substitutes, like jackets.
c. the quality of the sweatshirts.
d. the income of consumers.

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

(23) The "substitution effect" causes consumers to buy more when the price of a good falls because consumers
a. want to reward sellers for lowering the price by increasing sellers' incomes.
b. shift their purchases from alternative goods that have not fallen in price.
c. can afford to buy more of everything due to the drop in price of this good.
d. want to substitute goods for money.

(24) The gradual fall in the price of mobile (cellular) phone service has shifted the demand for landline phones to the left because mobile phones and landline phones are, in economic terms,
a. inferior goods.
b. complementary goods.
c. substitute goods.
d. normal goods.

(25) A rise in people's incomes will shift the demand for Ramen noodles to the left, if Ramen noodles are
a. a complementary good.
b. a substitute good.
c. a normal good.
d. an inferior good.

(26) Supply curves tend to slope upward because
a. the first few units are relatively cheap to produce but additional units often cost more.
b. you have to pay more to buy more.
c. sellers try to increase the price over time.
d. price necessarily equals quantity.

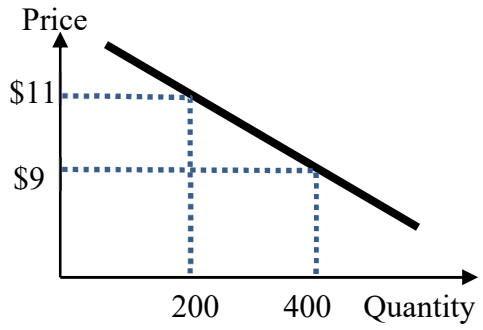
(27) Farm crops like corn, wheat and soybeans require fertilizer. If the price of fertilizer falls, the
a. demand for farm crops will shift left.
b. demand for farm crops will shift right.
c. supply of farm crops will shift left.
d. supply of farm crops will shift right.

(28) 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.

(29) Excess supply in the market for wheat would cause the price of wheat to
a. increase.
b. decrease.
c. oscillate up and down.
d. remain constant.

(30) In February, the price of roses rises and the quantity sold increases. This could be caused by a
a. rightward shift in the demand for roses.
b. rightward shift in the supply of roses.
c. leftward shift in the demand for roses.
d. leftward shift in the supply of roses.

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



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

(32) 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.

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

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) [Percent change, midpoint formula: 2 pts] Suppose milk costs $3 per gallon in Milwaukee and $5 per gallon in Denver. Compute the percent difference using the midpoint method.

%

(2) [Percent change of product: 4 pts] Consumer spending on electricity equals the price paid times the quantity purchased. Suppose the price of electricity increases by 7 percent and the quantity purchased decreases by 2 percent.

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

b. By approximately how much?

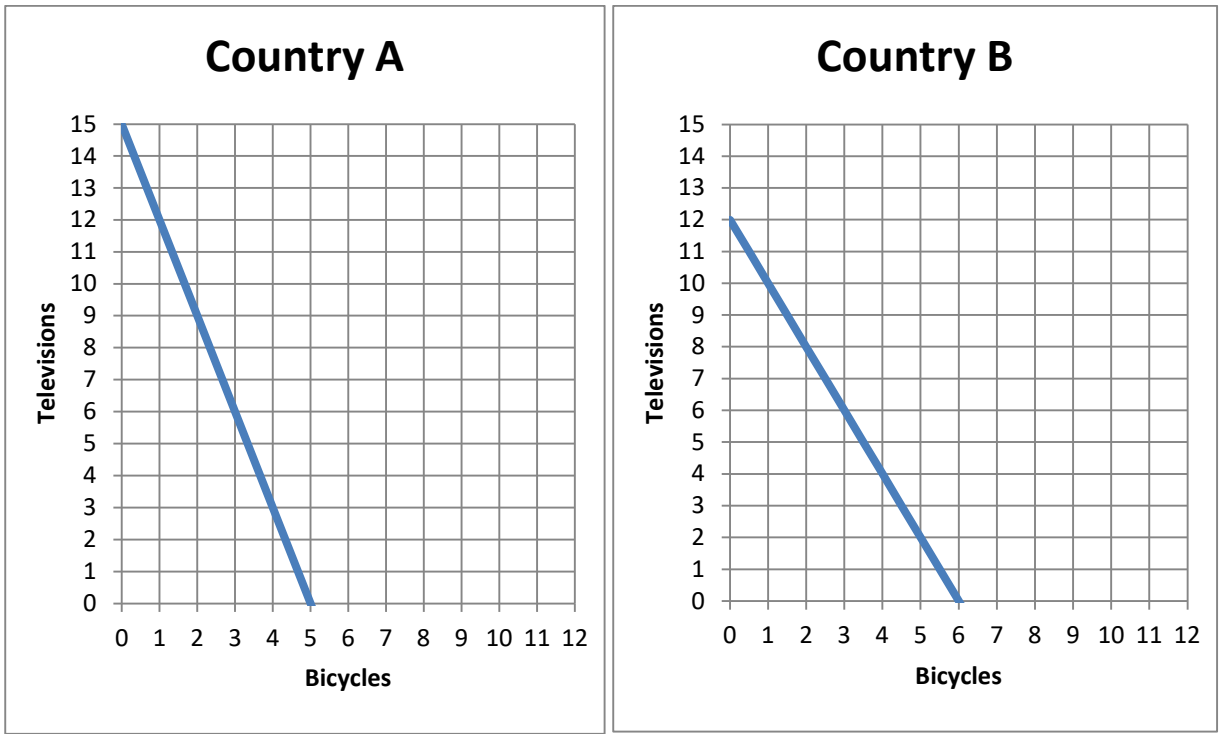
%

(3) [Production functions: 7 pts] A work crew plants trees. Complete the table by computing the work crew's average product and marginal product and placing your answers in the unshaded cells of the third and fourth columns below. Then answer the question below.

Number of workers	*Trees planted per day*	*Average Product*	*Marginal Product*
0 workers	0 trees planted		
			trees planted per worker
5 workers	25 trees planted	trees planted per worker	
			trees planted per worker
10 workers	40 trees planted	trees planted per worker	
			trees planted per worker
15 workers	45 trees planted	trees planted per worker	

Is the work crew's production function characterized by *diminishing returns* to their labor input? Answer YES or NO.

(4) [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?	

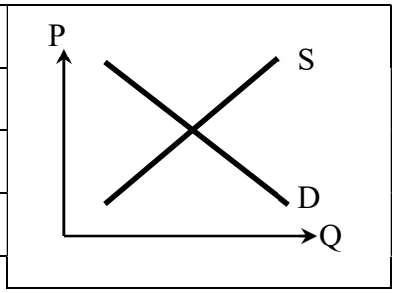
g. [3 pts] Fill in the blanks: *Both* countries can consume combinations of products *outside* their individual production possibility curves if _____ exports *three* bicycles to _____, which exports _____ televisions in return.

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**.

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

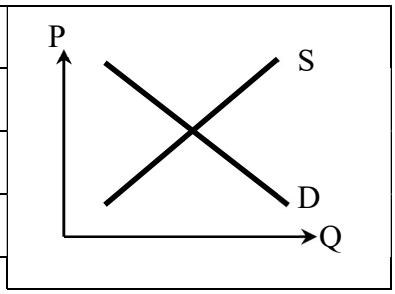
a. Consider the market for ***gasoline***. Suppose new government environmental regulations raise the cost of producing gasoline.

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).



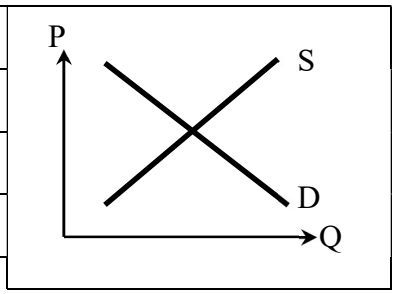
b. Consider the market for ***hotel rooms***: Suppose a recession lowers consumers' incomes.

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).

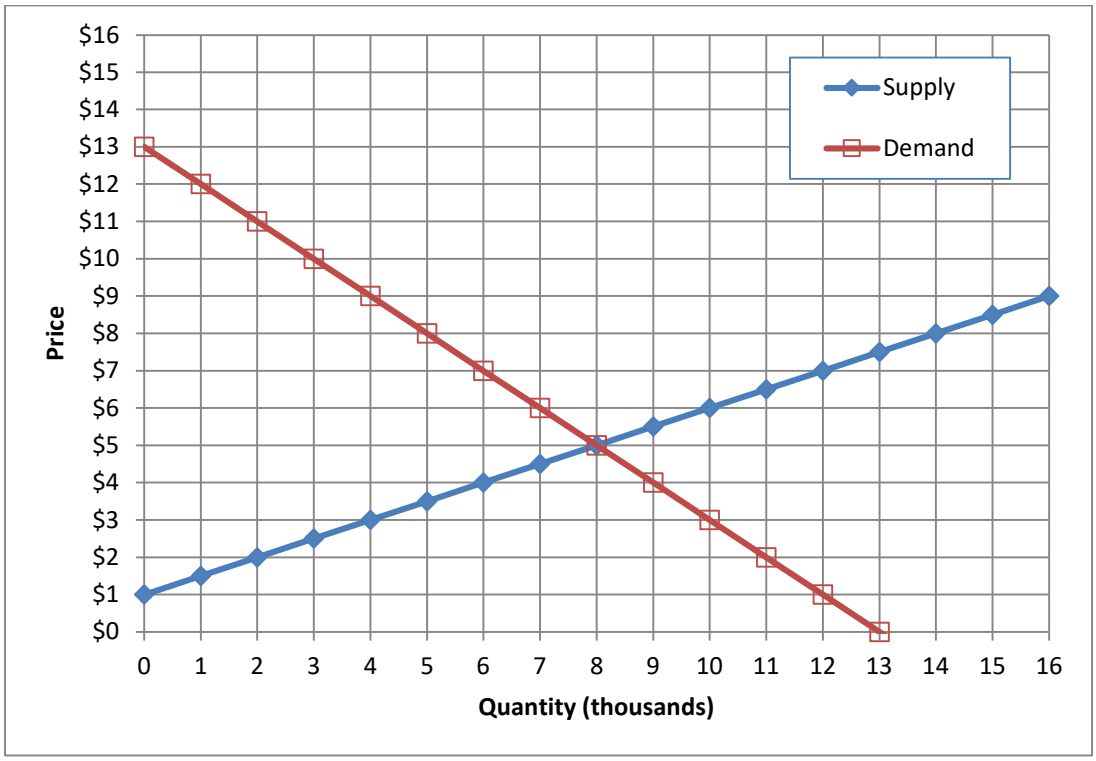


c. Consider the market for ***polyester clothing***: A change in consumer tastes favors natural fibers. At the same time, the price of polyester fabric rises.

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).



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



Suppose the price in this market were $4 for some unknown 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 4 thousandth flashdrive?

g. How much consumer surplus do they enjoy for the 4 thousandth flashdrive?

h. What is the marginal cost to producers of the 2 thousandth flashdrive?

i. How much producer surplus do they enjoy for the 2 thousandth flashdrive?

j. Compute total consumer surplus.

k. Compute total producer surplus.

$	
	thousand
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$	thousand
$	thousand

[end of exam]