ECON 010 - Principles of Macroeconomics
Drake University, Spring 2026
William M. Boal

Signature: _____

Printed name: _____

EXAMINATION 1 VERSION A
"Introduction to Economics"
February 17, 2026

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. 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, 17 pts total]

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

(2) Aaron buys a ticket to a football game for $50. When he arrives at the stadium, he discovers that scalpers are willing to pay $150 for his ticket. His *opportunity cost* of attending the game is now
a. $0.
b. $50.
c. $100.
d. $150.

(3) The term "equilibrium" in economics describes a situation where
a. no one wants to change their choices.
b. total costs exactly equal total benefits.
c. all companies are the same size.
d. all prices are equal.

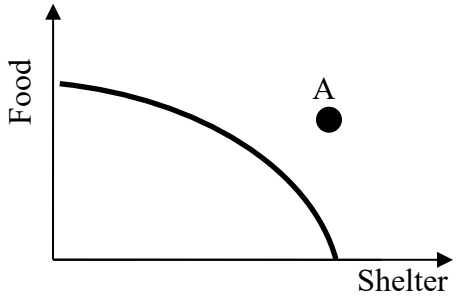
(4) "The government should provide a job for everyone who wants one" is an example of
a. a positive statement.
b. a normative statement.
c. both of the above.
d. none of the above.

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

(6) A *production function* shows the relationship between the
a. level of output and the level of demand for output.
b. price of output and the quantity produced.
c. quantity of input and the quantity of output.
d. current level of output and the past level of output.

(7) *Marginal product* may be computed as
a. the increase in output from a one-unit change in input.
b. total output divided by total input.
c. the change in output divided by the change in input.
d. (a) or (c) only.
e. all of the above.

(8) 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.



(9) Suppose Factory A's opportunity cost of producing a truck is 2 cars, but Factory B's opportunity cost of producing a truck is 3 cars. Which factory has a comparative advantage in producing trucks?
a. Factory A.
b. Factory B.
c. both factories.
d. neither factory.

(10) The United States and Mexico can both produce corn and automobiles. If the U.S. has a comparative advantage in corn, then which country has a comparative advantage in automobiles?
a. the United States.
b. Mexico.
c. Both countries.
d. Neither country.
e. Cannot be determined from information given.

(11) Barter is an unpopular method of trading because it
a. is subject to higher taxes.
b. requires that each party be able to offer a good that the other wants.
c. is often illegal.
d. causes both parties to lose.
e. all of the above.

(12) The Law of One Price means
a. a good cannot be resold.
b. all sellers are required by law to quote the same price.
c. the buyer and the seller in each transaction must agree on a price.
d. efficient markets eliminate price dispersion.
e. the total quantity buyers want to buy is negatively related to the price.

(13) The *law of demand* means that
a. buyers will pay whatever price is necessary to purchase the good.
b. the number of buyers must equal the number of sellers.
c. the quantity that buyers want to buy is negatively related to the price.
d. demand curves are necessarily straight lines.

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

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

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

(17) 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.

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 slopes: 4 pts] Suppose that the slope of the curve relating X and Y, with X on the horizontal axis and Y on the vertical axis, is **-2**. That is $\Delta Y/\Delta X = -2$. Now suppose that X increases by 3 units.

a. Does Y *increase* or *decrease*?

b. By how much? ____ units

(2) [Percent changes: 4 pts] Income per capita in a country equals total income divided by the population. Suppose total income increases by 5 percent and population increases by 2 percent.

a. Does income per capita *increase* or *decrease*?

b. By approximately how much? ____ %

(3) [Percent change: 2 pts] Suppose that total output in an industry is initially $500 billion. Then suppose output increases by 5 percent. Compute the new level of output.

$ ____ billion

(4) [Economic capital: 6 pts] Which of the following are examples of *economic capital* ? Answer YES or NO.

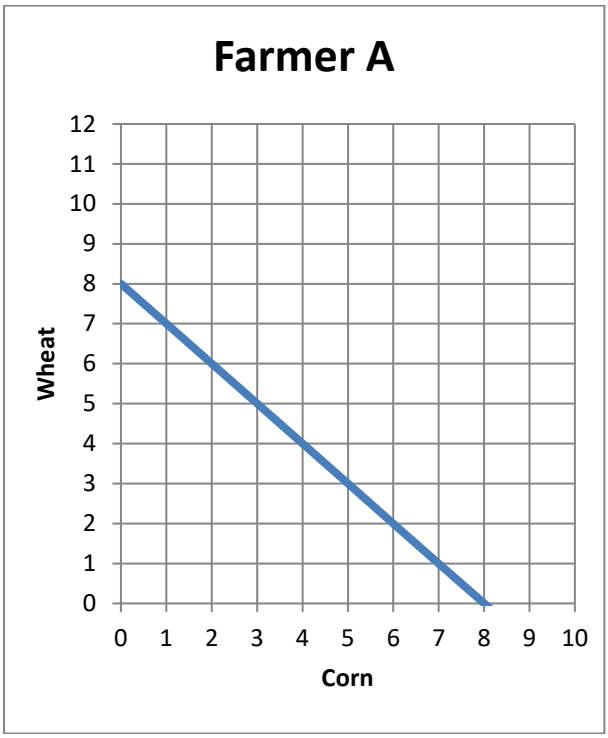
a. Bulldozers. ____
b. Corporate bonds. ____
c. Savings accounts. ____
d. Data centers. ____
e. Factories. ____
f. Tractor-trailer trucks. ____

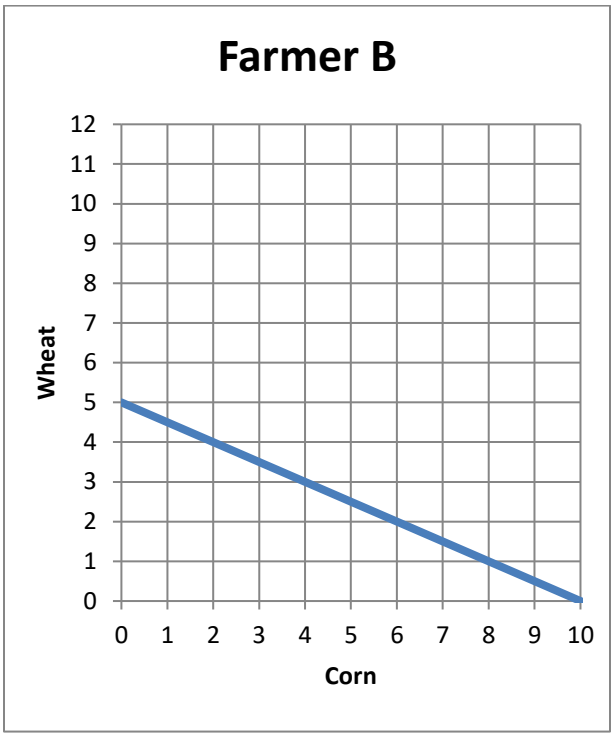
(5) [Production functions: 7 pts] A work crew plants trees. Complete the table by computing the work crew's average product and marginal product and placing your answers in the unshaded cells of the third and fourth columns below. Then answer the question below.

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

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

(6) [Comparative advantage, gains from trade: 17 pts] Farmer A and Farmer B can each produce wheat and corn. They each face a tradeoff between these two crops because of limited land. Their production possibility curves are shown below.





a. What is Farmer A's opportunity cost of producing a unit of corn? _____ units of wheat

b. What is Farmer B's opportunity cost of producing a unit of corn? _____ units of wheat

c. What is Farmer A's opportunity cost of producing a unit of wheat? _____ units of corn

d. What is Farmer B's opportunity cost of producing a unit of wheat? _____ units of corn

e. Which farmer has a comparative advantage in producing corn? _____

f. Which farmer has a comparative advantage in producing wheat? _____

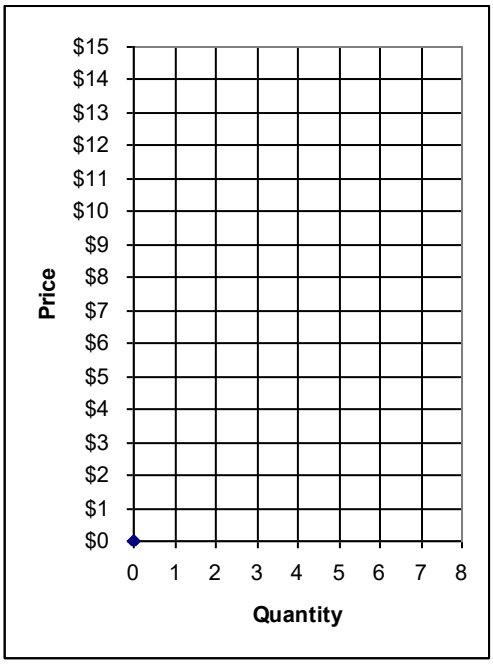
g. [3 pts] Fill in the blanks: *Both* farmers can consume combinations of crops *outside* their individual production possibility curves if _____ sends *two* units of wheat to _____, who sends _____ units of corn in return.

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

(7) [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 own 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*
Bob	\$14
Barb	\$13
Ben	\$12
Bailey	\$11
Brian	\$ 9
Betty	\$ 3
Bert	\$ 1

Seller	*Cost*
Sue	\$ 1
Steve	\$ 2
Sam	\$ 3
Sven	\$ 7
Sarina	\$11
Sean	\$12
Sally	\$13



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

a. If the price were **\$6**, 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). \$

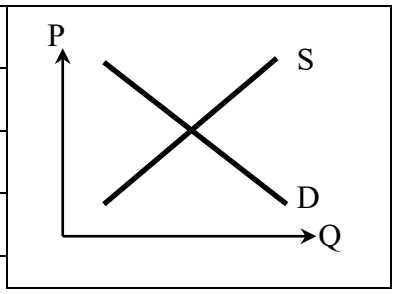
e. Compute the combined total surplus (or gains from trade) of all buyers and sellers. (Check your answer carefully! No partial credit for being "close"!) \$

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

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

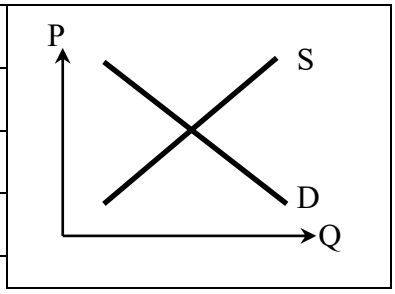
a. Consider the market for ***electric cars***. Suppose the price of gasoline rises.

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).



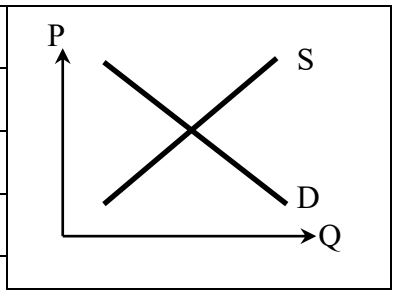
b. Consider the market for ***wooden furniture***: Suppose the price of wood rises.

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).

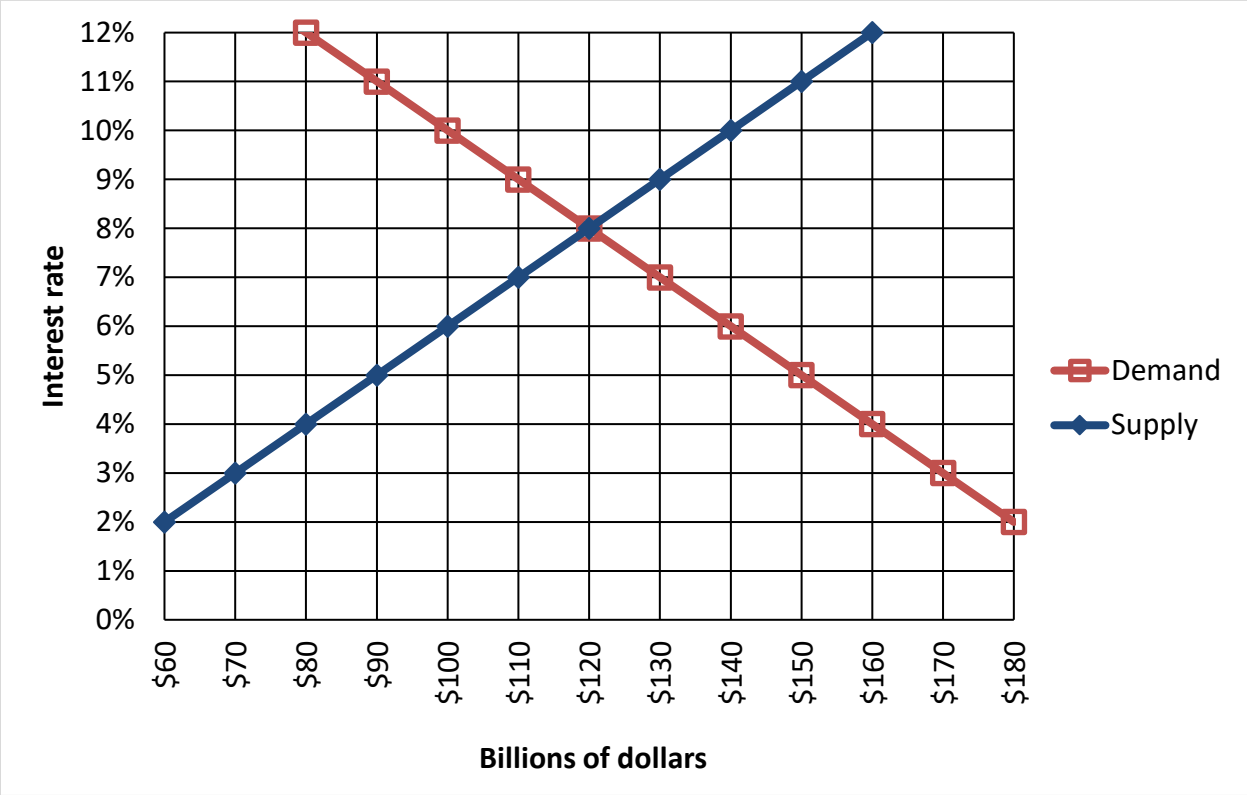


c. Consider the market for ***airline tickets***: Suppose the price of jet fuel rises. At the same time, a recession lowers consumers' incomes.

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).



(9) [Market equilibrium, price controls: 12 pts] The following graph shows the market for loans. Note that the interest rate is the price.



First, find the unregulated market equilibrium.

a. Find the equilibrium interest rate. ____ %

b. Find the equilibrium quantity. $ ____ billion

Second, suppose the government imposes a maximum interest rate (a type of price ceiling) of **5%**. No loans may be made for any higher interest rate.

c. Compute the quantity of loans demanded at this interest rate. $ ____ billion

d. Compute the quantity of loans supplied at this interest rate. $ ____ billion

e. Will there be *excess supply* or *excess demand* with this price ceiling? ____

f. How much? $ ____ billion

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

(1) Consider the following statement. "Every trade has a winner and a loser." Do you agree or disagree? Justify your answer with an example. (Ignore the graph.)

(2) Suppose a price ceiling were placed on infant formula. Would this help ensure that more babies had access to infant formula? Justify your answer with a supply-and-demand graph. Label all axes and curves.

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]