ECON 010 - Principles of Macroeconomics
Drake University, Spring 2026
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Signature: _____

Printed name: _____

EXAMINATION 1 VERSION B
"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. maximize their income.
b. use math to make decisions.
c. ignore "soft" concerns like friendships and charity.
d. do the best they can with what they have.
e. make sacrifices today for a better future.

(2) Amy buys a ticket to a concert for $60. When she arrives at the venue, she discovers that scalpers are willing to pay $80 for her ticket. Her *opportunity cost* of attending the concert is now
a. $0.
b. $20.
c. $60.
d. $80.

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

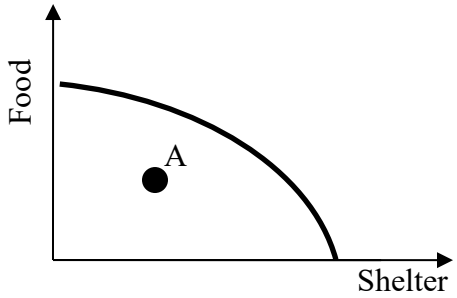
(4) "The unemployment rate is 20 percent" is an example of
a. a positive statement.
b. a normative statement.
c. both of the above.
d. none of the above.

(5) Which of the following would most naturally be studied in *macroeconomics* rather than microeconomics?
a. The price of automobiles.
b. The supply of childcare.
c. Inflation.
d. Access to healthcare.

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

(7) *Marginal product* may be computed as
a. the price of a good times the quantity produced.
b. the change in output divided by the change in input.
c. total output divided by total input.
d. total input divided by total output.
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 1.5 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. Mexico.
b. the United States.
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 often illegal.
b. causes both parties to lose.
c. is subject to higher taxes.
d. requires that each party be able to offer a good that the other wants.
e. all of the above.

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

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

(14) Spaghetti sauce is made from tomatoes, so if the price of tomatoes falls, 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 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.

(16) Some people believe there is excess demand 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 demand.

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

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 **4**. That is $\Delta Y/\Delta X = 4$. Now suppose that X increases by 5 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 1 percent and population increases by 3 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 $300 billion. Then suppose output increases by 4 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. Delivery trucks.

b. Fiber-optic cable networks.

c. Office buildings.

d. Checking accounts.

e. Cellular phone towers.

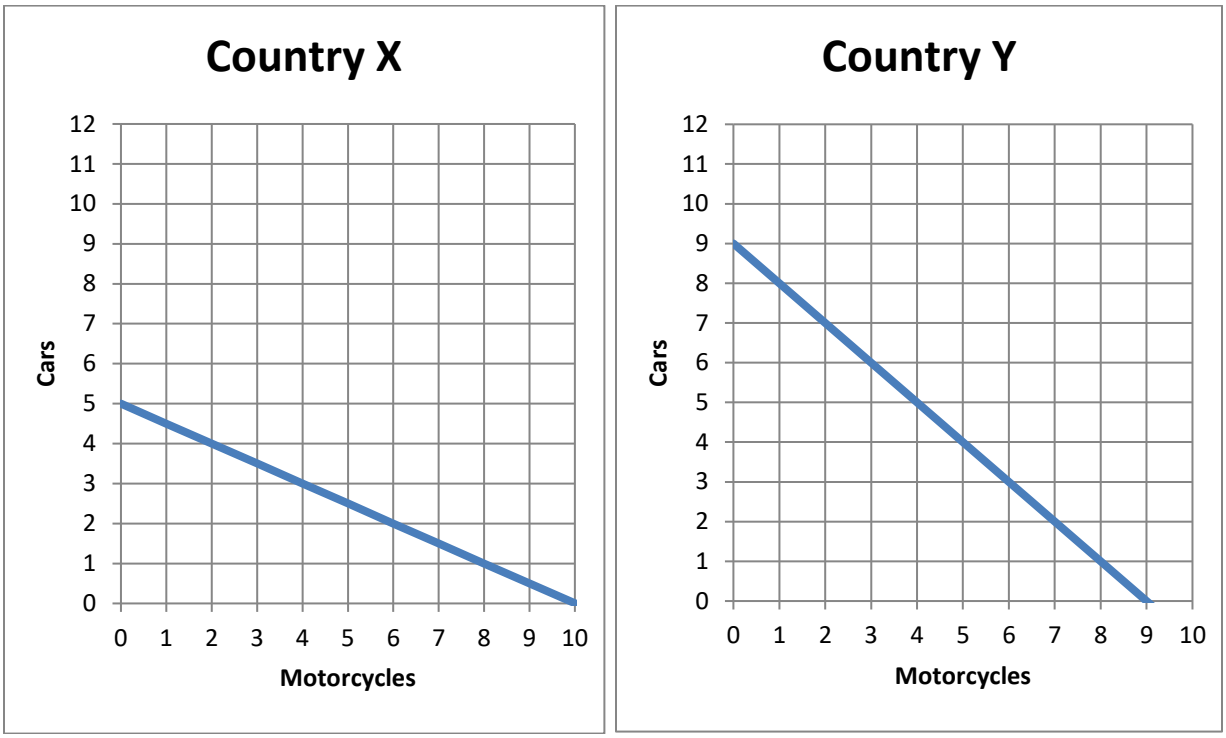
f. Shares of stock in corporations.

(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	5 trees	trees per worker	
			trees per worker
10 workers	20 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] Country X and Country Y can each produce cars and motorcycles. They each face a tradeoff between these two products because of limited workforces. Their production possibility curves are shown below.



a. What is Country X's opportunity cost of producing a motorcycle? cars

b. What is Country Y's opportunity cost of producing a motorcycle? cars

c. What is Country X's opportunity cost of producing a car? motorcycles

d. What is Country Y's opportunity cost of producing a car? motorcycles

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

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

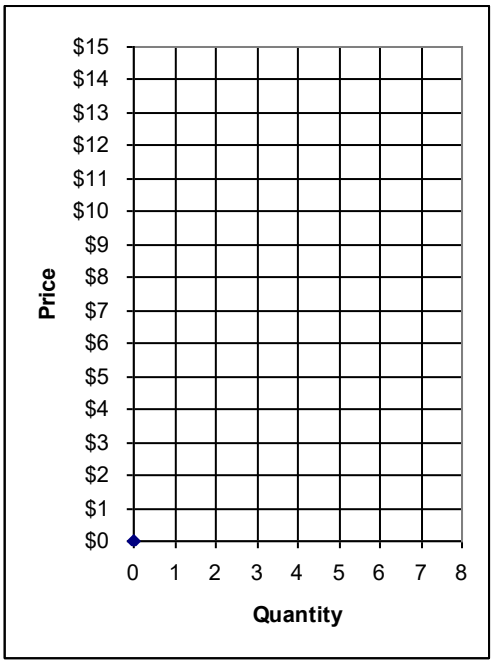
g. [3 pts] Fill in the blanks: *Both* countries can consume combinations of products *outside* their individual production possibility curves if _____ exports *three* cars to _____, which exports _____ motorcycles in return.

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**.

(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	\$12
Ben	\$10
Bailey	\$ 8
Brian	\$ 6
Betty	\$ 4
Bert	\$ 2

Seller	*Cost*
Sue	\$ 2
Steve	\$ 2
Sam	\$ 3
Sven	\$ 3
Sarina	\$ 4
Sean	\$ 8
Sally	\$12



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 **\$9**, 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). \$

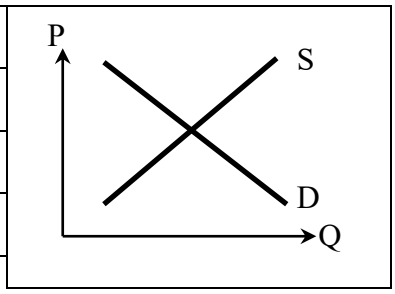
e. Compute the combined total surplus (or gains from trade) of all buyers and sellers. (Check your answer carefully! No partial credit for being "close"!) \$

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.

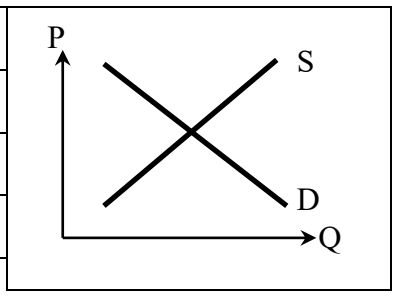
a. Consider the market for ***pizza***: The price of mozzarella cheese (an important ingredient in pizza) rises.

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).



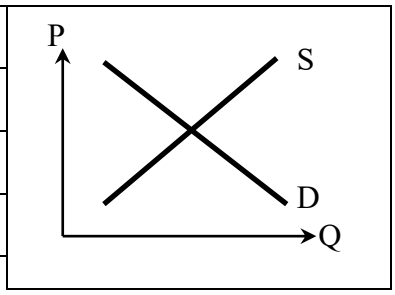
b. Consider the market for ***hotel rooms***: Suppose a recession lowers consumers' incomes.

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).

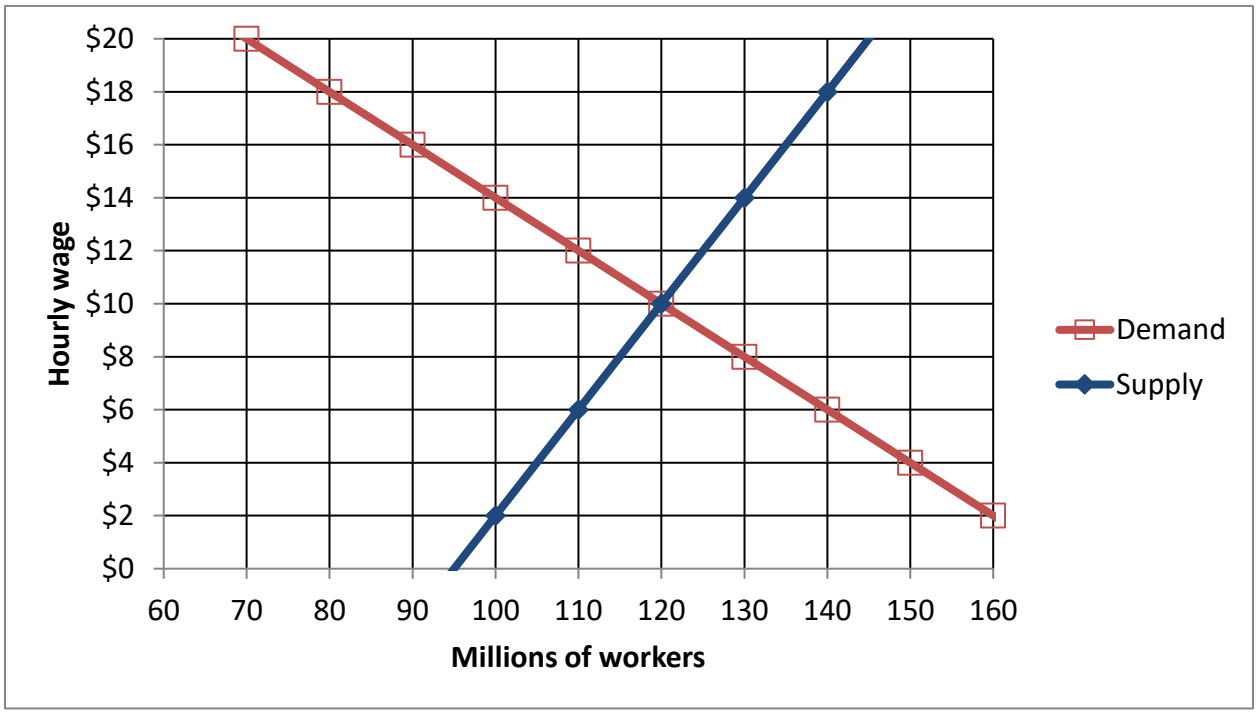


c. Consider the market for ***orange juice***: Suppose consumers begin shifting from fruit juices to water due to high sugar content in fruit juices. Simultaneously, a blight attacks orange trees.

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 labor market. Note that the hourly wage is the price.



First, find the unregulated market equilibrium.

a. Find the equilibrium wage. $

b. Find the equilibrium quantity. million

Second, suppose the government imposes a minimum hourly wage (a type of price floor) of **$ 14**. No worker may be hired for any lower wage.

c. Compute the quantity of workers demanded at this wage. million

d. Compute the quantity of workers supplied at this wage. million

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

f. How much? million

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]