MOCK MIDTERM
2 hours
To answer the questions use the space in between
Make sure that all graphs are labeled properly

Notes:
You may leave your answers as fractions or irrational numbers.

If you need more room, use the back of the page. If you do use the back, please indicate that you did.

Read each question carefully and be sure to answer all parts of every question.

YOUR NAME _____

QUESTION 1

There are two people in the economy, Batman and Robin. They can produce only two goods called X and Y. Batman has 8 hours and Robin has 10 hours of time. Maximum amounts of each good they can produce are shown in the table:

Person\Product	X	Y
Batman	4 units/hour	3 units /hour
Robin	6 units/hour	5 units /hour

Data are production in units per person per unit of time.

a) Graph the Production Possibility Frontier of each person.

b) Suppose Batman produces 24 units of X and 5 units of Y. Is this production plan efficient? Explain why or why not.

c) Who has Absolute Advantage in which product?

d) Who has Comparative Advantage in which product?

QUESTION 2

Suppose there are two people in the economy: Pat and Tim. Suppose there are two goods: X and Y. A benevolent social planner has to distribute 20 units of X and 10 units of Y between two people. You know that the utility of the bundle (x,y) where x is the amount of good X and y is the amount of good Y is the following:

$$\text{Pat: } u_{Pat}(x,y) = x + y$$
$$\text{Tim: } u_{Tim}(x,y) = x + 3y$$

   a. Draw the indifference curves of Pat and Tim for the utility levels $u = 1,2,3$. Do it on two separate graphs.

   b. Suppose that social planner gives all units of X to Tim and all units of Y to Pat. Is this allocation Pareto efficient? Is it Utilitarian efficient? Explain.

QUESTION 3

Suppose that the Marginal Utility of the consumer is given in the table:

Q	MU
0	--
1	20
2	10
3	5
4	3
5	1

a. Suppose the price of the good is $5 and the consumer consumes 5 units of the good. Is his consumption optimal? Why or why not?

b. Graph the demand of the consumer.

c. Suppose the price of the good is $7. Calculate the consumer's surplus.

QUESTION 4

Consumer 1 has demand curve given by P= 60-3Q.

Consumer 2 has demand curve given by P= 40-4Q.

    a. Graph each consumer's demand curve.

    b. Find the aggregate demand curve and graph it.

    c. What is the total consumer surplus when the price is P=20?

QUESTION 5

Consider the market for *cell phones* in Minneapolis. For each of the following situations, clearly state what happens to equilibrium price and equilibrium quantity and why. In each situation explicitly state your assumption about the relationship between the mentioned goods. Although it may help you to draw a picture, it is not required for full credit.

a. A new study shows that cell phones increase the risk of becoming deaf and a new technology is discovered, which makes cell phones easier to produce.

b. A lot of people moved out of the Minneapolis area and an earthquake destroyed half of the cell phone plants.

c. The price of stationary phones increases in Minneapolis and Chinese scientists find the way to make pandas reproduce.

d. The price of cell phone cases goes up and more cell phone suppliers move to Minneapolis.

QUESTION 6

Consider the market for laptops. You observe that if a laptop costs $300, then 50 laptops are demanded. If laptop costs $500, then 20 laptops are demanded. If laptop costs $450, then 50 desktop computers are demanded and if laptops cost $200, then 90 desktop computers are demanded.

    a. Sketch a demand/supply diagram for the market for laptops. Label the equilibrium price and quantity on your diagram.

    b. Calculate the Cross Price Elasticity of Demand for laptops and desktop computers. How are these two goods related?

    c. Suppose the price of desktop computers decreases. Draw and label the effects of this shift on your diagram from above (for laptops). Label the new equilibrium price and quantity. Explicitly state what happened to equilibrium price and quantity.

QUESTION 7

Bill is a student. He likes two goods: beer and hot dogs. Bill's income is $120. The price of one beer is $4 and the price of a hot dog is $5. You observe that Bill is consuming 20 beers and 8 hot dogs. You also observe that when Bill's income grows to $200 his consumption of beer drops to 10 and consumption of hot dogs goes up to 28.

    a) Draw Bill's two budget constraints and mark the observed consumption bundles.

    b) Calculate the Income Elasticity of Demand for beer.

    c) Is beer normal or inferior good? Are hot dogs normal or inferior? Explain.

    d) Suppose that the Law of Demand holds. Suppose that income stays at $120, but the price of beer goes up to $6. Will Bill drink more or less beer?

QUESTION 8

Suppose you are given the following data about the firm, which produces cars.

Q_{out}	TR	MC
0	0	--
1	8	1
2	15	2
3	20	6
4	23	9
5	24	12

a. What is the optimal number of cars for this firm? Why?

b. Suppose you are given additional information that FC = 2.5. What is the profit of the firm at the optimal Q_{out}?

QUESTION 9

Who benefits from the gasoline subsidies in Iran and who loses? Explain why this happens in a few sentences.