EE211 Section 1
Homework 1 due on February 10 th, 2025 (Email: kaewkwanee211@gmail.com) Explain your answers with graph in details.

1. Maria can read 20 pages of economics in an hour. She can also read 50 pages of sociology in an hour. She spends 5 hours per day studying.

    a. Draw Maria's production possiblity frontier form reading economics and sociology.
    b. What is Maria's opportunity cost of reading 100 pages of sociology?

2. American and Japanese workers can each produce 4 cars per year. An American worker can produce 10 tons of grain per year, while a Japanese worker can produce 5 tons of grain per year. To keep things simple, assume that each country has 100 millions workers.

    a. Graph the production possiblity frontier for American and Japanese economies.
    b. For the United States, what is the opportunity cost of a car? Of grain? For Japan, what is the opportunity cost of a car?
    c. Which country has an absolute advantage in producing cars? In producing grain?
    d. Which country has a comparative advantage in producing cars? In producing grain?
    e. Without trade, half of each country's workers produce cars, and half produce grain. What is the quantities of cars and grain does each country produce?
    f. Starting from a position without trade, give an example in which trade makes each country better off.

3. Diego and Darnell are roommates. They spend most of their time studying, but they leave some time for their favorite activities: making pizza and brewing root beer. Diego takes 4 hours to brew a gallon of root beer and 2 hours to make a pizza. Darnell takes 6 hours to brew a gallon of root beer and 4 hours to make a pizza.

a. What is each roommate's opportunity cost of making a pizza. Who has the absolute advantage in making pizza? Who has the comparative advantage in making pizza?
b. If Diego and Darnell trade foods with each other, who will trade pizza in exchange for root beer?
c. The price of pizza can be expressed in terns of gallons of root beer. What is the highest price at which pizza can be traded that would make both roommates better off? What is the lowest price? Explain.

4. Consider the market for minivans. For each of the events listed here, identify which of the determinants of demand or supply are affected. Also, indicate whether demand or supply increases or decreases. Then, draw a diagram to show the effect on the price and quantity of minivans.

a. People decide to have more children.
b. A strike by steelworkers raises steel prices.
c. Engineers develop new automated machinery for the production of minivans.
d. The price of sports utility vehicles rises.
e. A stock market crash lowers people's wealth.

5. Consider the market for video streaming services, TV screens, and tickets at movie theatres.

a. For each pair, identify whether they are complements or substitutes:
    - video streaming and TV screens.
    - video streaming and movie tickets.
    - TV screens and movie tickets.
b. Suppose a technological advance reduces the cost of manufacturing TV screens. Draw a diagram to show what happens in the market for TV screens.
c. Draw two more diagrams to show how the change in the market for TV screens affects the markets for video streaming and movie theatres.

6. The market for pizza has the following demand and supply schedules:

Price	Quantity demanded	Quantity supplied
$4	135 pizzas	26 pizzas
5	104	53
6	81	81
7	68	98
8	53	110
9	39	121

a. Graph the demand and supply curves. What are the equilibrium price and quantity in this market?
b. If the actual price in this market were **above** the equilibrium price, what would drive the market toward equilibrium?
c. If the actual price in this market were **below** the equilibrium price, what would drive the market toward equilibrium?

7. Cups of coffee and donuts are complements. Both have inelastic demand. A hurricane destroys half the coffee bean crop. Use appropriately labeled diagrams to answer the following questions.

a. What happens to the price of coffee beans?

b. What happens to the price of a cup of coffee? What happens to total expenditure on cups of coffee?

c. What happens to the price of donuts? What happens to total expenditure on donuts?

8. Suppose that your demand schedule for pizza is as follows:

Price	Quantity demanded (income = $20,000)	Quantity demanded (income = $24,000)
$8	40 pizzas	50 pizzas
10	32	45
12	24	30
14	16	20
16	8	12

a. Use the midpoint method to calculate your price elasticity of demand as the price of pizza increases from $8 to $10 if (i) your income is $20,000 and (ii) your income is $24,000.

b. Calculate your income elasticity of demand as your income increases form $20,000 to $24,000 if (i) the price is $12 and (ii) the price is $16.

9. Consider public policy aimed at smoking.

a. Studies indicate that the price elasticity of demand for cigarettes is about 0.4. If a pack of cigarettes currently costs $5 and the government wants to reduce smoking by 20 percent , by how much should it increase the price?

b. If the government permanently increases the price of cigarettes, will the policy have a larger effect on smoking one year from now or five years from now?

c. Studies also find that teenagers have a higher price elasticity of demand than adults. Why might this be true?