1. England and Scotland both produce scones andsweaters. Suppose that an English worker can produce 50 scones per hour or 1 sweater per hour. Suppose that a Scottish worker can produce 40 scones per hour or 2 sweaters per hour.
    a. Which country has the absolute advantage in the production of each good? Which country has the comparative advantage?
    b. If England and Scotland decide to trade, which commodity will Scotland export to England? Explain.
    c. If a Scottish worker could produce only 1 sweaterper hour, would Scotland still gain from trade?Would England still gain from trade? Explain.
2. Suppose you are a utility maximizer and you want to attend a six-day long Dhaka International Music Fest, 2020, but it's difficult for you to be there because you have your midterm week coming up. So you start taking online courses from 10 Minute School to avoid dealing with bad grades. Here, the entrance fee per visit to music fest is 10 taka and price for each online lecture is 25 taka.
   Use the information from the table and follow "Equi-marginal principle" to find out the optimal consumption bundle of attending music Fest and taking online courses.

Visit to Music Fest (M)	**MU_m**	**Online Lectures (L)**	**MU_L**
1	1000	0	0
2	1800	1	1000
3	2500	2	1800
4	3000	3	2500
5	3200	4	3000

3. Suppose Mashrafe is a utility maximizer and assume he's visiting New-Zealand for the series against the Kiwis.Here, the fee for the doctor is $8 and price for coffee is $4. Suppose, he has an income of $40 with him. Use the information from the table to

Doctor Visit (D)	TU_D	Coffee shop visit (C)	TU_C
0	0	0	0
1	50	1	75
2	90	2	123
3	122	3	159
4	150	4	183
5	276	5	205
6	200	6	225
7	222	7	238
8	242	8	248
9	259	9	255
10	275	10	260

    a. Find all the affordable consumption bundles

Consumption Bundle	Doctors Visit (Qd)	Utility from Doctor's visit (TU_D)	Coffee Shop Visit (Qc)	Utility from Coffee shop visit (TU_C)	Total Utility
A					

B					
C					
D					
E					
F					

b. Find out the optimal consumption bundle? (Use total utility maximizing rule)

4. According to equi-marginal principle, how will a consumer respond if his $MU_A/P_A > MU_B / P_B$?

5. The table sets out as Berger Paints total product schedule.

Labor (workers per week)	Output (Houses painted per week)
1	30
2	70
3	120
4	160
5	190
6	210
7	220

a. Calculate the marginal product of labor

b. Draw the marginal product of labor curve

Berger paints hires needy students at 500 taka a week per student to paint houses. It leases equipment worth 1000 taka to paint those houses.

c. Calculate total cost, variable cost, and fixed cost of each output in the table.

d. Calculate average total cost, average fixed cost, average variable cost, and marginal cost of each output in the table.

e. How many houses are painted when average total cost is minimized?

6. In her spare time, Priyanka makes handmade cards using stationeries (paper, pen, glue) she buys from a store. She sells the final product at local crafts fairs and online. Being interviewed once, she said the following: "The materials cost me 50 taka, and the rest is just my labor, which is free. One card sells for about 125 taka, which gives me net profit of 75 taka for one night of work." Is she talking about economic profit or accounting profit? Explain the difference between these profits.

7. Explain the difference between Decreasing returns to scale and Law of diminishing marginal returns

8. Find MP_L and AP_L. Plot TP, MP_L , AP_L curves and explain their relations

Labor	Output
1	8
2	18
3	26
4	32
5	32
6	30

9. Why stage I and III of production are not efficient? (use diagram)

10. Complete all the blanks in the table

Output	TFC	TVC	TC	AFC	AVC	ATC	MC
0			24	-	-	-	-
1							16
2		50					
3			108				
4							52
5					39.2		
6						47	
7							65
8					50		

11. A commercial fisherman who catches fish using only his fishing net notices the following relationship between hours spent fishing and the quantity of fish caught. The fisherman hasa fixed cost of 10 taka (his fishing net). The cost of each labor is 50 taka.

Labor	Quantity of Fish
0	0
1	10
2	18
3	24
4	28
5	30

- **a.** What are the fixed inputs and variable inputs in the production of fish?
- **b.** Use these data to graph the fisherman's production function.
- **c.** What is the marginal product of each labor? Draw the marginal product curve.
- **d.** What is the fisherman's Variable Cost and Total Cost?
- **e.** Graph the fisherman's total-cost curve.
- **f.** For each of the given levels of output, calculate the Marginal Cost (MC), average fixed cost (AFC), average variable cost (AVC), and average total cost (ATC)
- **g.** How many fish are caught when average total cost is minimized?
- **h.** Graph the MC and ATC curve together and explain their relationship

12. Why total utility curve increases at a decreasing rate?

13. Consider the following cost information for a pizzeria:

Quantity	Total Cost	Variable Cost
0 dozen pizzas	$300	$ 0
1	350	50
2	390	90
3	420	120
4	450	150
5	490	190
6	540	240

What is the pizzeria's fixed cost?Construct a table in which you calculate the marginal cost per dozen pizzas using the information on total cost. Also, calculate the marginal cost per dozen pizzas using the information on variable cost. What is the relationship between these sets of numbers? Explain.