Date: august 21, 15

Instructions

There are five questions in this paper

Answer any three questions

**Question one**

1. A monopolist’s demand function is given by .His average cost function (A.C) takes the form . Find the output level Q which gives
2. Maximum Revenue (TR)

P=30-0.75

R=Px

R=(30-0.75)

R=30-0.75

Your difference revenue

FOC

0

SOC

=-1.5q

hows max R

1. Minimum average costs(AC)

Make AC the subject

Differentiate AC to get quality Q

q=10units

SOC

+ve shows AC is minimum

1. Maximum profits()

**SOC**

-ve shows that profit is maximum

**Question two**

A film produces amount x and y of two different grades of cakes,using the same production process.The production transformation curve,showing the maximum output of either good attainable for any given level of output of the other is:

1. What are the largest amount of x and y that can be produced.

**Production possibility**

frontline (ppf)

To get large amount of x,y=0

**To the larger amount of y, x=0**

1. What amount of X and Y should be provided to have
2. 0.25Y=X

X=1.35 units positive

1. Y=2X

BUT

0.25Y=X

0.25Y=1.35

Y=5.4units

Question three

A firm producing hockey sticks has production function given by

𝚀=2

Where K=Capital

L= Labour inputs

In the short-run,the firms amounts of capital equipment equipment is fixed at K=100.The rental rate for capital is V=1.00 shillings and the wage rate for L=4.00 shillings.

1. Calculate the firms short-run costs functions as the short-run average cost function.

Q=

BUT

Make L subject

1. What is the firms short-run marginal cost functions?
2. Calculate the firms SATC,STC AND SMC if it produces:
3. 25 hockey sticks
4. 50 hockey sticks
5. 100 hockey sticks
6. 200 hockey sticks

SRTC

25 hockey sticks

50 hockey sticks

100 hockey sticks

200 hockey sticks

SRMC

SRMC=0.02q

25 hockey sticks

50 hockey sticks

100 hockey sticks

200 hockey sticks

Yes because of minimum SRMC cut the SRAC at its minimum point.

QUESTION FOUR

The demand function for a commodity is described by the exponential function

Where Q is the quantity demand and TR=Total Revenue

1. The quality for which total revenue (TR) is maximized

Divide this equation in 2 parts since it has 2 variables.

1. The maximum revenue

Can cancel each other

1. (hint: revenue is maximized when

QUESTION FIVE

In making a certain item,a business has discovered that the demand function for the item is represented by:

The cost function of producing X items is given by

1. Find the price per unit that yields a maximum profit(p\*)

Using law on indeces if you are multiplying you just add power

1. Find the output level that maximizes profits(Q\*)
2. Find the maximum profit (π\*)
3. SOS

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QUESTION ONE

Give a two commodity market model defined by the following demand and supply functions.

Determine the equilibrium prices and quantities for the commodities

Solve equation (i) and (ii)

Multiply equation by 5 to eliminate

Therefore

QUESTION TWO

1. The demand for good 1 is related to the price of goods 2 by the following :
2. Determine the demand for good 1 when the price of good 2 is 8

Square and get the cube root

METHOD 2

Get cube of 8 and then square

But

n=cross elasticity

But

1. Find the cross-elesticity of demand for good 1 with respect to when

Dettemine

1. The price elasticity of supply for the commodity when:
2. Under the conditions will the supply for the commodity be
3. Elastic

Elastic-This occurs it price elasticity Is greater than one ie change in price result change in quantity demand

1. Or unitary elasticity.

Unitary-this occurs when price elasticity equals to one i.e change in price result to same proportionate change in quality demand.

QUESTION THREE

Consider a one factor production function

1. Find the marginal product of L
2. Express the in terms of α,L and Q

Eliminate base L for

Method 2

Make A the subject

Substitute A in above

1. Determine the slope of

You differenciate

1. What is the sign of the slope of and show how you determine it.

Since greater than zero and less than one

Value of α=0.1,0.2,0.3,0.4,…………..0.9

Sign is given by

Pic any value of α I.e 0.9

(-ve)

You draw a negative slope

1. Determine whether increasing,diminishes or remains constant as L increases.

QUESTION FOUR

The average revenue and average cost functions for a firm as:

Find the level of Q and P that will maximize profits of the firm. Show the first order conditions (F.O.C) as well as the second order condition (S.O.C)

FOC

SOC

QUESTION FIVE

A consumer’s utility function is given by where the quantities are consumed. If the price of is 6 and that of is 3 and consumer income is 60

1. Write out the consumers utility maximization problem

The consumer utility maximization problem is maximize his/her utility constraint/line

Budget constraint

But the subject to

1. What is the corresponding Lagrangian function
2. Find the level of that will satisfy the first order conditions for maximum

Divide equation i and ii

Cross multiply

1. Compute the optimum value of u

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QUESTION ONE

If the market demand schedule of a commodity can be represented by the function

Where is the quality demanded of commodity 1, is the price of commodity 1, is the price of another commodity and y is income

1. express
2. ,when
3. , when