Assignment -2

1. a) i) business travelers = $\dfrac{\frac{1900-2000}{1900+2000}/2}{\frac{250-200}{250+200}/2}$

$= -0.23$

Here $|E| < 1$, so inelastic

ii) vacationers travelers = $\dfrac{\frac{600-800}{600+800}/2}{\frac{250-200}{250+200}/2}$

$= -1.29$

Here $|E| > 1$, so elastic

b) Every products elasticity will be high depending on how many alternatives are available. Vacationers have many different substitute because this is elastic on the other hand busines travelers are inelastic that's mean they have less substitute and they have to reach earlier. But travel vacationers have many options. Thats why vacationers have a different elasticity from business travelers.

2. Here, $E_d = 0.9$; $\%\Delta Q = 20\%$

we know,

$$E_d = \frac{\%\Delta Q}{\%\Delta P}$$

$$\Rightarrow \%\Delta P = \frac{\%\Delta Q}{E_d} = \frac{20}{0.9} = 50\%$$

∴ The government need to increase 50% in the price. which means $5 \times \frac{50}{100} = 2.5\$$. So the new price will be 7.5 $

3. Eqi marginal principle state that a consumer will recieve maximum satisfaction when the ratio of marginal utility of a product to the price is equal to the ratio of marginal utility to the price of any other product he consumes. Thats mean he always have to maintain $\frac{Mu_a}{P_a} = \frac{Mu_b}{P_b}$ if the price of any product suddenly rises or drops shall have to decrease or increase the comuption of the product.

4 a) given,

$m = 200$

$P_x = 10$

$P_y = 20$

we know,

$m = P_x Q_x + P_y Q_y$

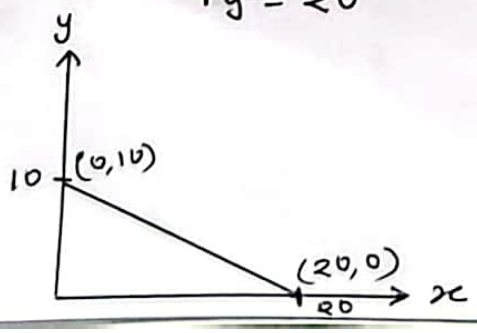
$\Rightarrow 200 = 10 Q_x + 20 Q_y$

$\Rightarrow 20 = Q_x + 2 Q_y$

$\therefore Q_y = 10 - \frac{1}{2} Q_x$

if $Q_y = 0$ then $Q_x = 20$

$Q_x = 0$ then $Q_y = 10$



b) we get $Q_y = \underbrace{10}_{c} - \underbrace{\frac{1}{2}}_{m} Q_x$

so, slope is $-\frac{1}{2}$ and intercepts at 10.

c) if $m = 300$ then

$m = P_x Q_x + P_y Q_y$

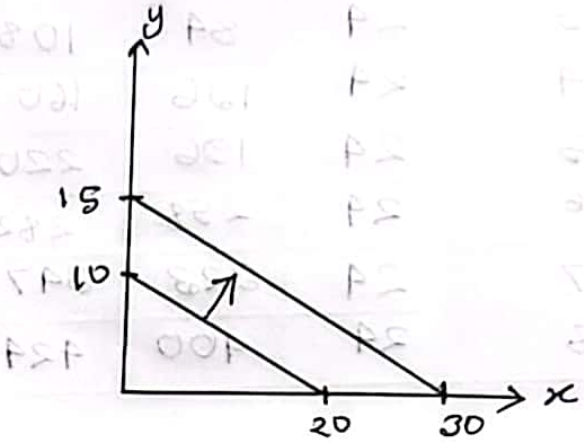
$\Rightarrow 300 = 10 Q_x + 20 Q_y$

$\Rightarrow 30 = Q_x + 2 Q_y$

$\therefore Q_y = 15 - \frac{1}{2} Q_x$

if, $Q_y = 0$ then $Q_x = 30$

if $Q_x = 0$ then $Q_y = 15$



D) we know,

$m = P_x Q_x + P_y Q_y$

$\Rightarrow 200 = 12 Q_x + 20 Q_y$

$\therefore Q_y = 10 - \frac{3}{5} Q_x$

if, $Q_y = 0$ then $Q_x = 16.67$

$Q_x = 0$ then $Q_y = 10$

Here Q_y remain unchanged. So the consumer have to maintain the ratio of $\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$. So he have to increase MU_x. So consumer will have to reduce the consuption of x product.

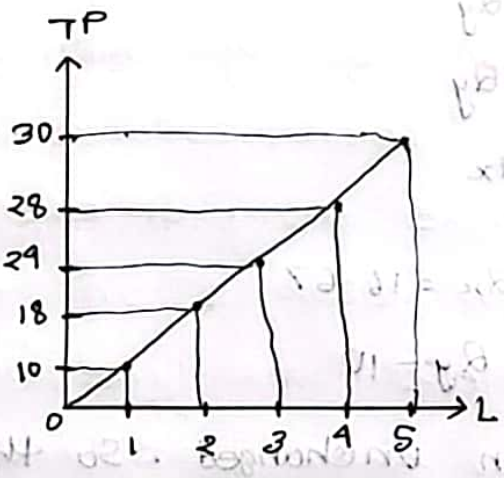
5.

Output	TFC	TVC	TC	AFC	AVC	ATC	MC
0	24	0	24	-	-	-	-
1	24	16	40	24	16	40	16
2	24	50	74	12	25	37	34
3	24	84	108	8	28	36	34
4	24	136	160	6	34	40	52
5	24	196	220	4.8	39.2	44	60
6	24	258	282	4	43	47	62
7	24	323	347	3.42	46.15	49.57	65
8	24	400	424	3	50	53	77

6

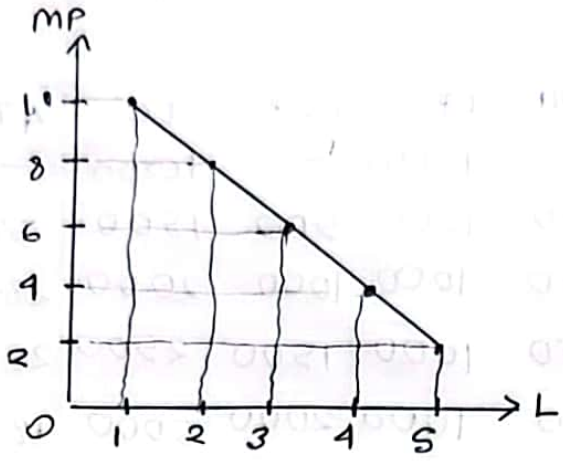
a) The fixed input is fishing net which is 10 tk and variable input is 50 tk each labor

b)

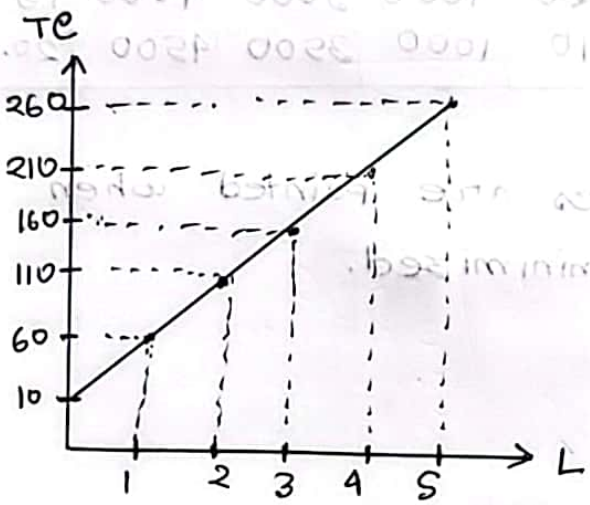


c)

MC	L	QF/TP	MP	TFC	TVC	AFC	AVC	ATC	TC
-	0	0	0	10	0	-	-	-	10
5	1	10	10	10	50	10	5	6	60
6.25	2	18	8	10	100	5	5.56	6.11	110
8.38	3	24	6	10	150	3.33	6.25	6.67	160
12.5	4	28	4	10	200	2.5	7.14	7.5	210
2.5	5	30	2	10	250	2	8.33	8.67	260



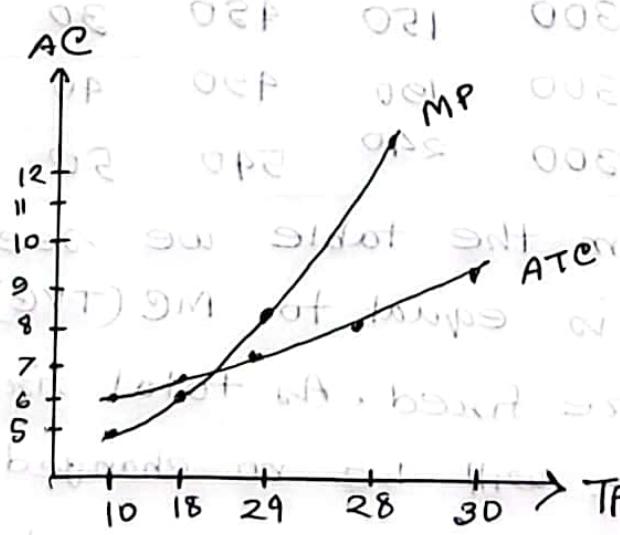
e)



The graph of total cost

g) 10 fish are caught when average total cost is minimized

h)



The graph of MC and ATC curve.

7. a)

Labour	OP/TP	MP	TFC	TVC	TC	ATC	AFC	AVC	MC
0	0	–	1000	–	1000	–	–	–	–
1	30	30	1000	500	1500	50	33.33	16.67	16.67
2	70	40	1000	1000	2000	28.57	14.28	14.28	12.5
3	120	50	1000	1500	2500	20.83	8.33	12.5	10
4	160	40	1000	2000	3000	18.75	6.25	12.5	12.5
5	190	30	1000	2500	3500	18.42	5.26	13.15	16.67
6	210	20	1000	3000	4000	19.04	4.76	14.28	25
7	220	10	1000	3500	4500	20.45	4.54	15.90	50

e) 190 houses are painted when average total cost is minimized.

8.

Quantity	TFC	TVC	TC	MC(TC)	MC (TVC)	
0	300	0	300	–	–	
1	300	50	350	50	50	
2	300	90	390	40	40	
3	300	120	420	30	30	
4	300	150	450	30	30	
5	300	190	490	40	40	
6	300	240	540	50	50	

Here from the table we see that the MC (TC) is equal to MC (TVC). Our capital and lands are fixed. As total fixed cost is constant so there will be no changed in MC if we use total cost. Which means that the MC (TVC)

will be equal to the marginal cost for using TC at any point.