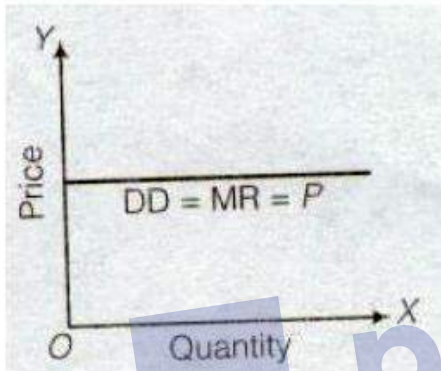


**Question 1.** What would be shape of demand curve, so that the total revenue curve is

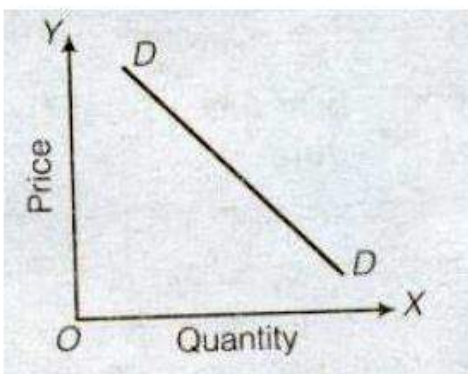
- (i) A positively sloped straight line passing through the origin.
- (ii) A horizontal line.

**Answer**

(i) Demand curve or AR curve will be a horizontal straight parallel to the X-axis because positively sloped straight line TR curve passing, through the origin indicates that price remains constant at all level of output.



(ii) Demand curve will slope downwards from left to right because horizontal TR indicates that TR remains same at levels of output. It is possible only when price falls with rise in output



**Question 2.** From the schedule provided below calculate the total revenue, demand curve and the price elasticity of demand.

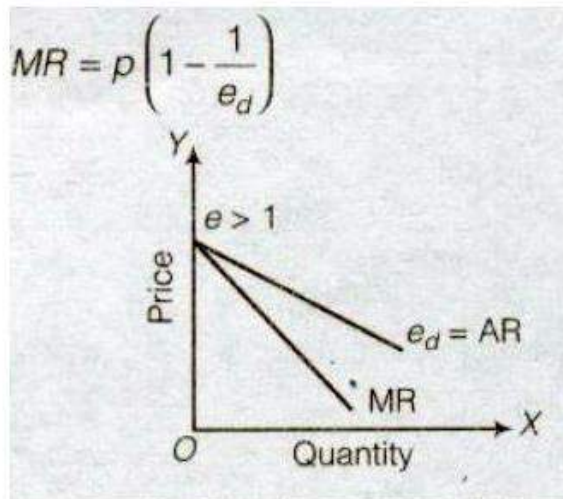
Q	1	2	3	4	5	6	7	8	9
MR	10	6	2	2	2	0	0	0	-5

### Answer

Q	MR	TR	Demand curve(TR/Q)	Price elasticity of demand
1	10	10	10.00	
2	6	16	8.00	$e_d=5$
3	2	18	6.00	2
4	2	20	5.00	2
5	2	22	4.40	2.5
6	0	22	3.67	1
7	0	22	3.14	1.2
8	0	22	2.75	1.1
9	-5	17	1.89	0.38

**Question 3.** What is the value of the MR when the demand curve is elastic?

**Answer** When the demand curve is elastic, then MR will be positive. It means  $e > 1$  and



**Question 4.** A monopoly firm has a total fixed cost of Rs 100 and has the following demand schedule

Q	1	2	3	4	5	6	7	8	9	10
Price	100	90	80	70	60	50	40	30	20	10

Find the short run equilibrium quantity, price and total profit. What would be the equilibrium in the long run? In case the Total cost was Rs 1000, describe the equilibrium in the short run and in the long run.

### Answer

Q	Price	TR (P×Q)
1	100	100
2	90	180
3	80	240
4	70	280
5	60	300
6	50	300
7	40	280
8	30	240
9	20	180
10	10	100

The total cost of the monopolist firm is zero. the profit will be maximum where TR is maximum. As, in the above case, TR is maximum at the 6th unit of output.

Profit of the firm = 300

Short run equilibrium price =Rs 50

Profit = TR - TC

= 300- 0 =300

As per the case if the total cost is Rs 1000 then

= 300- 1000 = - 700

The firm is earning loss in the short run and It will stop its production in the long run.

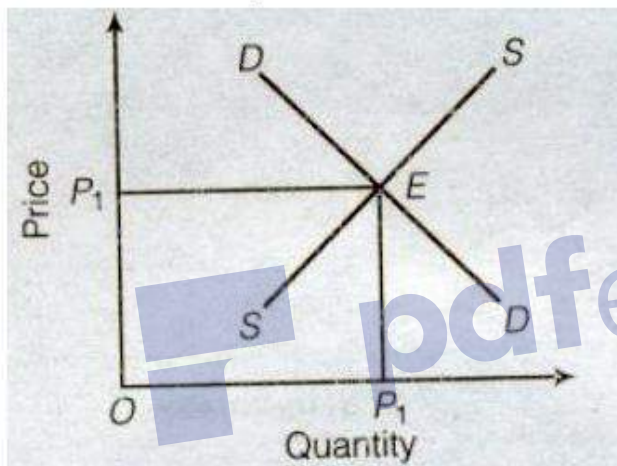
**Question 5.** If the monopolist firm of exercise 3, was a public sector firm. The government set a rule for its manager to accept the government fixed price as given i.e., to be a price taker and therefore behave as a firm in a perfectly competitive market) and the government decide to set the price so that demand and supply in the market are equal. What would be the equilibrium price, quantity and profit in that case?

**Answer**

Equilibrium price =  $P_1$

Equilibrium quantity =  $Q_1$

Profit = Normal profit



In a perfectly competitive market a firm earns zero profit. It implies that a competitive firm can get only normal profit

**Question 6.** Comment on the shape of MR curve in case the TR curve is a

- (i) Positively sloped straight line.
- (ii) Horizontal straight line.

**Answer**

(i) When TR curve IS positively sloped straight line, MR curve will be a horizontal like parallel to the X-axis It snows AR and MR is constant at each level of output.

(ii) When TR curve is a horizontal line, then MR will be zero because horizontal TR indicates that It remains constant at levels of output.

**Question 7.** The market demand curve for a commodity and the total cost for a monopoly firm producing the commodity is given by the . schedules below. Use the information to calculate the following

Quantity	0	1	2	3	4	5	6	7	8
Price	52	44	37	31	26	22	19	16	13
Total cost	10	60	90	100	102	105	109	115	125

(i) The MR and Me schedules

(ii) The quantities for which the MR and Me are equal.

(iii) The equilibrium quantity of output and the equilibrium price of the commodity.

(iv) The total revenue, total cost and total profit in equilibrium.

**Answer**

Q	Price	TR (PxQ)	MR
0	52	0	
1	44	44	44
2	37	74	30
3	31	93	19
4	26	104	11
5	22	110	6
6	19	114	4
7	16	112	-2
8	13	104	-8

MC Schedules

Q	TC	MC
0	10	

1	60	50
2	90	40
3	100	10
4	102	2
5	105	3
6	109	4
7	115	6
8	125	10

(ii)  $MR = Me$  at 6th unit of output

(iii) Equilibrium quantity = 6 Units Equilibrium price = Rs 19

(iv) At equilibrium

Total revenue = 114

Total cost = 109

Total Profit =  $114 - 109 = \text{Rs}5$

Profit = Rs 5

**Question 8.** Will the monopolist firm continue to produce in the short run if a loss is incurred at the best short run level of output?

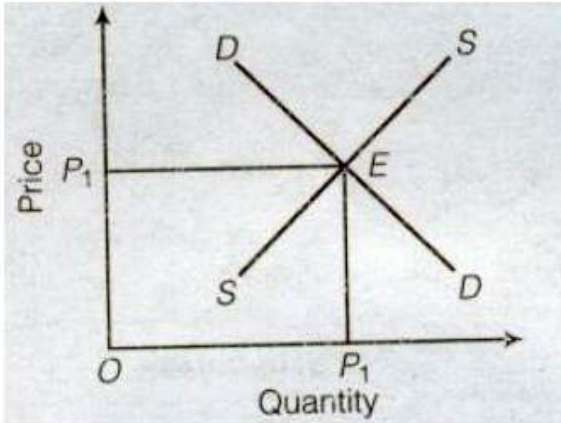
**Answer** In the short run of a firm incurs loss the continuation to produce determined given below

(i) If at this level of output MC curve cuts the MR curve from above or Me curve is negatively sloped then the firm will continue to produce in the short run if a loss is incurred Beyond this level of output firm may earn profit as Me is sloping downward.

(ii) If at this level of output MC curve cuts the MR curve from below or Me curve is rising then the firm will not continue to produce in the short run it a loss is incurred

**Question 9.** Explain why the demand curve facing a firm under monopolistic competition is negatively sloped.

**Answer** Demand of the product is not in the central 01 monopoly firm because it has no close substitutes. In order to increase the output to be sold, monopolist will have to reduce the price. Therefore, monopoly firm faces a downward sloping demand curve.



In figure, at price  $OP$ , firm can sell  $OQ$  quantity. Demand rises to  $OQ_1$  the price is reduced to  $OP$ . So, demand curve under monopoly is negatively sloped as more quantity can be sold only at a lower price.

**Question 10.** What is the reason for the long run equilibrium of a firm in monopolistic competition to be associated with zero profit?

**Answer** In monopolistic competition the number of firms is large. There is free entry and exit of firms. The goods produced are differentiated. In the short run a firm may earn abnormal profit which attracts the new firms. It will expand the output of the commodity. It will cause fall in the market price of the commodity. Thus phenomenon of entry of firms, expansion of output and falling of price will continue till profit become zero. At this level of profit there will be no attraction for new firms to enter in the market. Contrary to it if firms are facing losses in the short run. Some firms would stop producing the commodity. It results in contraction of output that will lead to a higher price. The exit would halt once profits become zero. Thus, entry or exit of firms in long run halts once profits become zero and this would serve as the long run equilibrium.