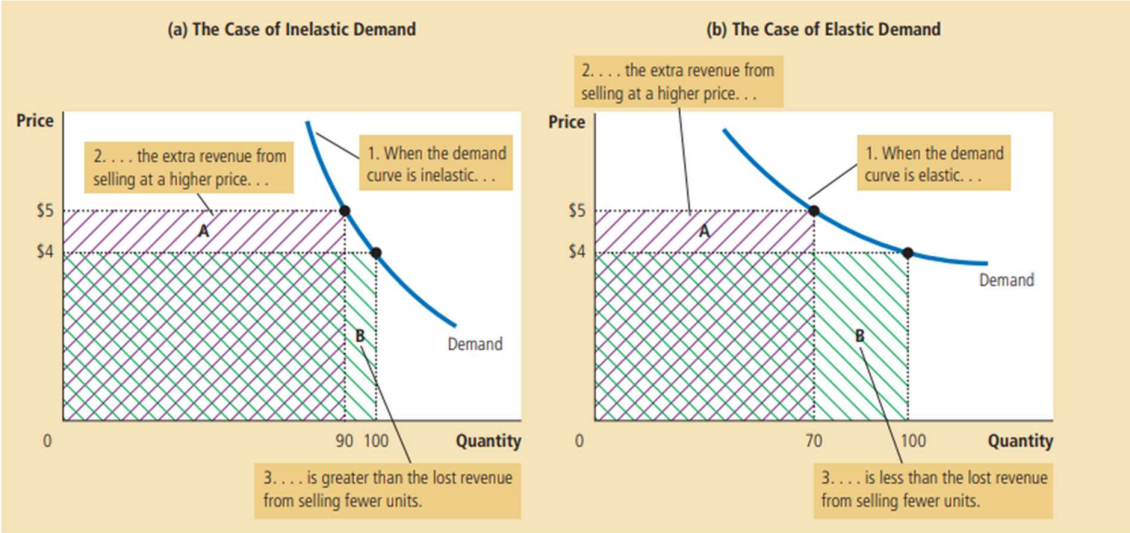
Q. Explain the relationship between total revenue and the price elasticity of demand with relevant diagrams.

Ans:

Total revenue is the amount paid by buyers and received by sellers of the good. In any market, total revenue is P times Q (TR = P*Q), the price of the good times the quantity of the good sold.

The impact of a price change on total revenue (the product of price and quantity) depends on the price elasticity of demand. The following figure illustrates the fact:



In panel (a), the demand curve is inelastic. In this case, an increase in the price leads to a decrease in quantity demanded that is proportionately smaller, so total revenue increases. Here an increase in the price from $4 to $5 causes the quantity demanded to fall from 100 to 90. Total revenue rises from $400 to $450.

In panel (b), the demand curve is elastic. In this case, an increase in the price leads to a decrease in quantity demanded that is proportionately larger, so total revenue decreases. Here an increase in the price from $4 to $5 causes the quantity demanded to fall from 100 to 70. Total revenue falls from $400 to $350.

Therefore,

- When demand is inelastic (a price elasticity less than 1), price and total revenue move in the same direction.
- When demand is elastic (a price elasticity greater than 1), price and total revenue move in opposite directions.
- If demand is unit elastic (a price elasticity exactly equal to 1), total revenue remains constant when the price changes