**1A. What do you understand by ‘Elastic Demand’ and ‘Inelastic Demand’?**  
 "Elastic demand" and "inelastic demand" are terms used in economics to describe the responsiveness of the quantity demanded of a good or service to changes in its price. These concepts are fundamental to understanding how consumers react to price changes and, consequently, how markets behave.

**Elastic Demand:**

* **Definition:** Elastic demand refers to a situation where the quantity demanded of a good or service is highly responsive to changes in its price.
* **Characteristics:**
  + **Percentage Change:** In elastic demand, a small percentage change in price leads to a relatively larger percentage change in quantity demanded.
  + **Substitutability:** Goods with close substitutes often exhibit elastic demand. If there are alternative products available, consumers can easily switch to other options when the price changes.
  + **Luxury Goods:** Elastic demand is often associated with luxury goods or non-essential items. Consumers can easily reduce their consumption of these items when prices rise.
* **Elasticity Coefficient (Ed):**
  + The elasticity coefficient (Ed) is a measure of the responsiveness of quantity demanded to changes in price. If Ed > 1, demand is elastic.
* **Graphical Representation:**
  + On a demand curve, elastic demand is represented by a flatter, more horizontal curve.

**Inelastic Demand:**

* **Definition:** Inelastic demand refers to a situation where the quantity demanded of a good or service shows little responsiveness to changes in its price.
* **Characteristics:**
  + **Percentage Change:** In inelastic demand, a percentage change in price results in a proportionately smaller percentage change in quantity demanded.
  + **Necessities:** Goods that are necessities or have limited substitutes often exhibit inelastic demand. Consumers may continue to buy these goods even if prices increase.
  + **Short-Run vs. Long-Run:** Demand may be more inelastic in the short run compared to the long run.
* **Elasticity Coefficient (Ed):**
  + If Ed < 1, demand is inelastic.
* **Graphical Representation:**
  + On a demand curve, inelastic demand is represented by a steeper, more vertical curve.

**Unitary Elasticity:**

* **Definition:** Unitary elasticity occurs when the percentage change in quantity demanded is exactly equal to the percentage change in price.
* **Elasticity Coefficient (Ed):**
  + If Ed = 1, demand is unitary elastic.
* **Graphical Representation:**
  + On a demand curve, unitary elasticity is represented by a curve with a slope that is exactly in between the slopes of elastic and inelastic demand curves.

Understanding the concept of elasticity is crucial for businesses and policymakers. For example, businesses need to know how changes in price will affect their total revenue. If demand is elastic, a price decrease may lead to a significant increase in quantity demanded, potentially increasing total revenue. Conversely, if demand is inelastic, a price increase may lead to a smaller decrease in quantity demanded, also potentially increasing total revenue.

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| **1.B** | Bring the distinction between the following:   1. Average cost (AC) and Marginal Cost (MC) 2. Average Revenue (AR) and Marginal Revenue (MR) |

**Distinguish between Average cost (AC) and Marginal Cost (MC)**

Average Cost (AC) and Marginal Cost (MC) are two important concepts in microeconomics that help businesses and economists analyze production and pricing decisions. Here's how they differ:

**Average Cost (AC):**

1. **Definition:**
   * **Average Cost (AC):** It is the total cost of production divided by the quantity of output. It represents the average cost per unit of output.
2. **Formula:**
   * ��=����� ������������ �� ������*AC*=*Quantity* *of* *OutputTotal* *Cost*​
3. **Types of Average Cost:**
   * **Average Fixed Cost (AFC):** It is the fixed cost per unit of output and decreases as production increases.
   * **Average Variable Cost (AVC):** It is the variable cost per unit of output and typically decreases initially but may increase at higher levels of production.
   * **Average Total Cost (ATC):** It is the sum of average fixed cost and average variable cost.
4. **Behavior:**
   * Average costs tend to decrease at lower levels of production due to spreading fixed costs over more units. However, they may eventually increase due to diminishing marginal returns.
5. **Use:**
   * Average cost is used to assess the overall cost efficiency of production.

**Marginal Cost (MC):**

1. **Definition:**
   * **Marginal Cost (MC):** It is the additional cost incurred by producing one more unit of output. It represents the change in total cost resulting from a one-unit change in production.
2. **Formula:**
   * ��=Δ����� ����Δ�������� �� ������*MC*=Δ*Quantity* *of* *Output*Δ*Total* *Cost*​
3. **Behavior:**
   * Marginal cost initially tends to decrease due to increasing returns, reaches a minimum point, and then increases due to diminishing returns.
4. **Relationship with Average Cost:**
   * Marginal cost intersects average variable cost and average total cost at their minimum points.
5. **Use:**
   * Marginal cost is crucial for profit maximization decisions. In competitive markets, firms typically produce where marginal cost equals marginal revenue to maximize profits.

**Summary of Differences:**

* **Focus:**
  + **Average Cost (AC):** Focuses on the average cost per unit of output.
  + **Marginal Cost (MC):** Focuses on the additional cost of producing one more unit.
* **Calculation:**
  + **Average Cost (AC):** Calculated by dividing total cost by the quantity of output.
  + **Marginal Cost (MC):** Calculated by finding the change in total cost for a one-unit change in output.
* **Behavior:**
  + **Average Cost (AC):** Tends to decrease initially, then may increase at higher levels of production.
  + **Marginal Cost (MC):** Tends to decrease initially, reaches a minimum point, and then increases.
* **Intersection:**
  + Marginal cost intersects average variable cost and average total cost at their minimum points.
* **Decision-Making:**
  + **Average Cost (AC):** Used to assess overall cost efficiency.
  + **Marginal Cost (MC):** Crucial for profit maximization decisions, especially in competitive markets.

Understanding the relationship between average cost and marginal cost is essential for businesses to make informed decisions about production levels, pricing strategies, and resource allocation.

Distinguish between Average Revenue (AR) and Marginal Revenue (MR)

Average Revenue (AR) and Marginal Revenue (MR) are two important concepts in microeconomics that pertain to the revenue side of a firm's operations. Here's how they differ:

**Average Revenue (AR):**

1. **Definition:**
   * **Average Revenue (AR):** It is the revenue generated per unit of output sold. Mathematically, it is the total revenue divided by the quantity of output sold.
2. **Formula:**
   * ��=����� ��������������� �� ������*AR*=*Quantity* *of* *OutputTotal* *Revenue*​
3. **Behavior:**
   * In a perfectly competitive market, where a firm is a price taker, average revenue is equal to the market price. In other market structures, especially monopolistic or monopolistically competitive markets, AR is not necessarily equal to the price.
4. **Use:**
   * Average revenue is used to assess the average revenue earned from each unit of output sold.

**Marginal Revenue (MR):**

1. **Definition:**
   * **Marginal Revenue (MR):** It is the additional revenue generated from selling one more unit of output. It represents the change in total revenue resulting from a one-unit change in quantity sold.
2. **Formula:**
   * ��=Δ����� �������Δ�������� �� ������*MR*=Δ*Quantity* *of* *Output*Δ*Total* *Revenue*​
3. **Behavior:**
   * In a perfectly competitive market, where a firm is a price taker, marginal revenue is equal to the market price. In monopolistic or monopolistically competitive markets, marginal revenue is typically less than the price.
4. **Relationship with Average Revenue:**
   * In all market structures, when output is being sold profitably (i.e., when MR is positive), MR is less than AR.
5. **Use:**
   * Marginal revenue is crucial for profit maximization decisions. A firm maximizes its profit by producing at a level where marginal cost equals marginal revenue.

**Summary of Differences:**

* **Focus:**
  + **Average Revenue (AR):** Focuses on the revenue earned per unit of output sold.
  + **Marginal Revenue (MR):** Focuses on the additional revenue generated from selling one more unit.
* **Calculation:**
  + **Average Revenue (AR):** Calculated by dividing total revenue by the quantity of output.
  + **Marginal Revenue (MR):** Calculated by finding the change in total revenue for a one-unit change in output.
* **Behavior:**
  + **Average Revenue (AR):** In a perfectly competitive market, AR is equal to the market price. In other markets, AR may not be equal to the price.
  + **Marginal Revenue (MR):** In a perfectly competitive market, MR is equal to the market price. In other markets, MR is typically less than the price.
* **Relationship:**
  + When output is being sold profitably (i.e., when MR is positive), MR is less than AR.
* **Decision-Making:**
  + **Average Revenue (AR):** Used to assess the average revenue earned from each unit of output sold.
  + **Marginal Revenue (MR):** Crucial for profit maximization decisions, especially in competitive markets.

Understanding average revenue and marginal revenue is essential for businesses to determine their pricing strategies, optimize production levels, and make decisions that maximize their profits, particularly in different market structures.