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Elasticity and Its Application



THE ELASTICITY OF SUPPLY

- *Price elasticity of supply* is a measure of how much the quantity supplied of a good responds to a change in the price of that good.
- Price elasticity of supply is the percentage change in quantity supplied resulting from a percentage change in price.

Figure 5 The Price Elasticity of Supply

(a) Perfectly Inelastic Supply: Elasticity Equals 0

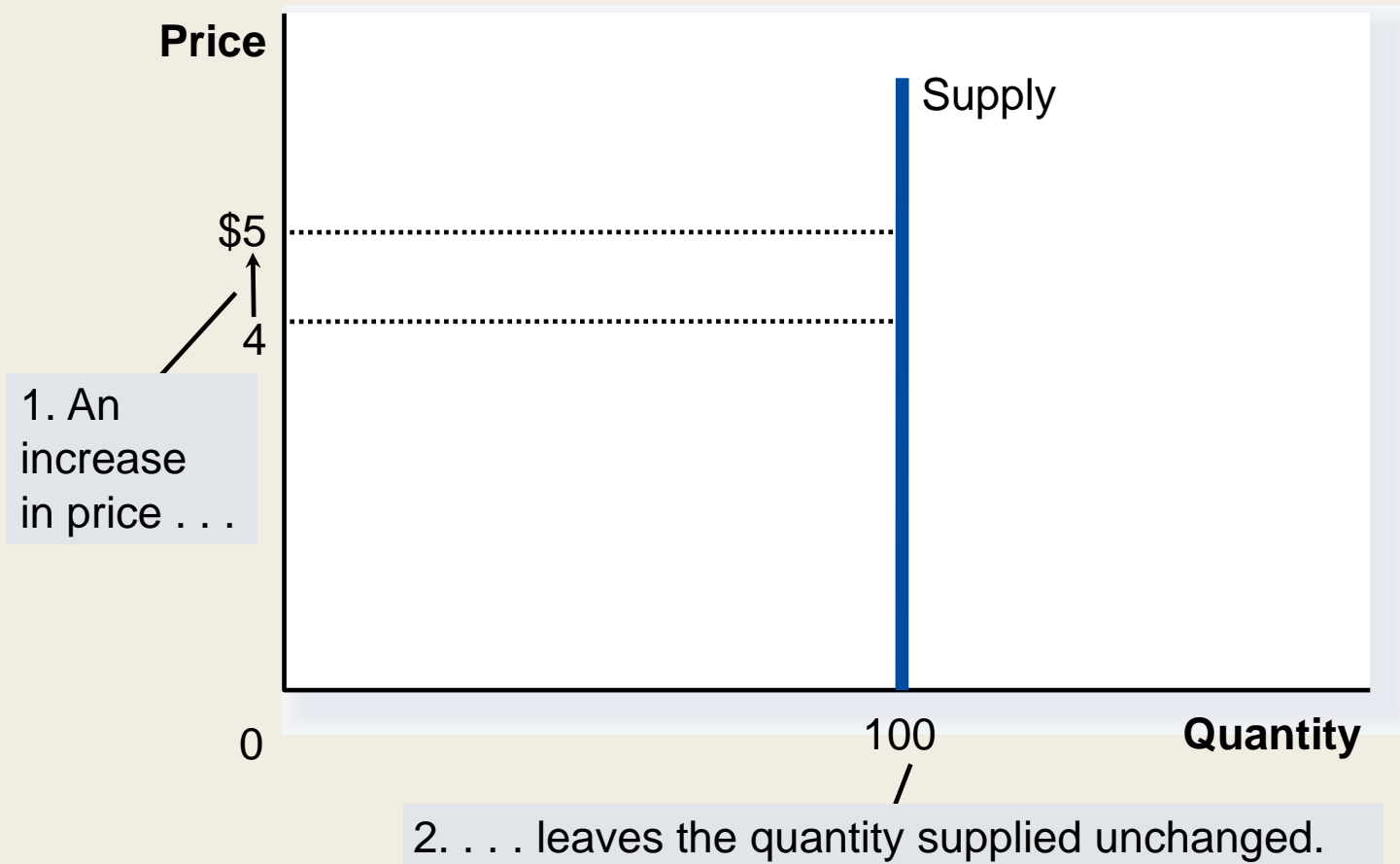


Figure 5 The Price Elasticity of Supply

(b) Inelastic Supply: Elasticity Is Less Than 1

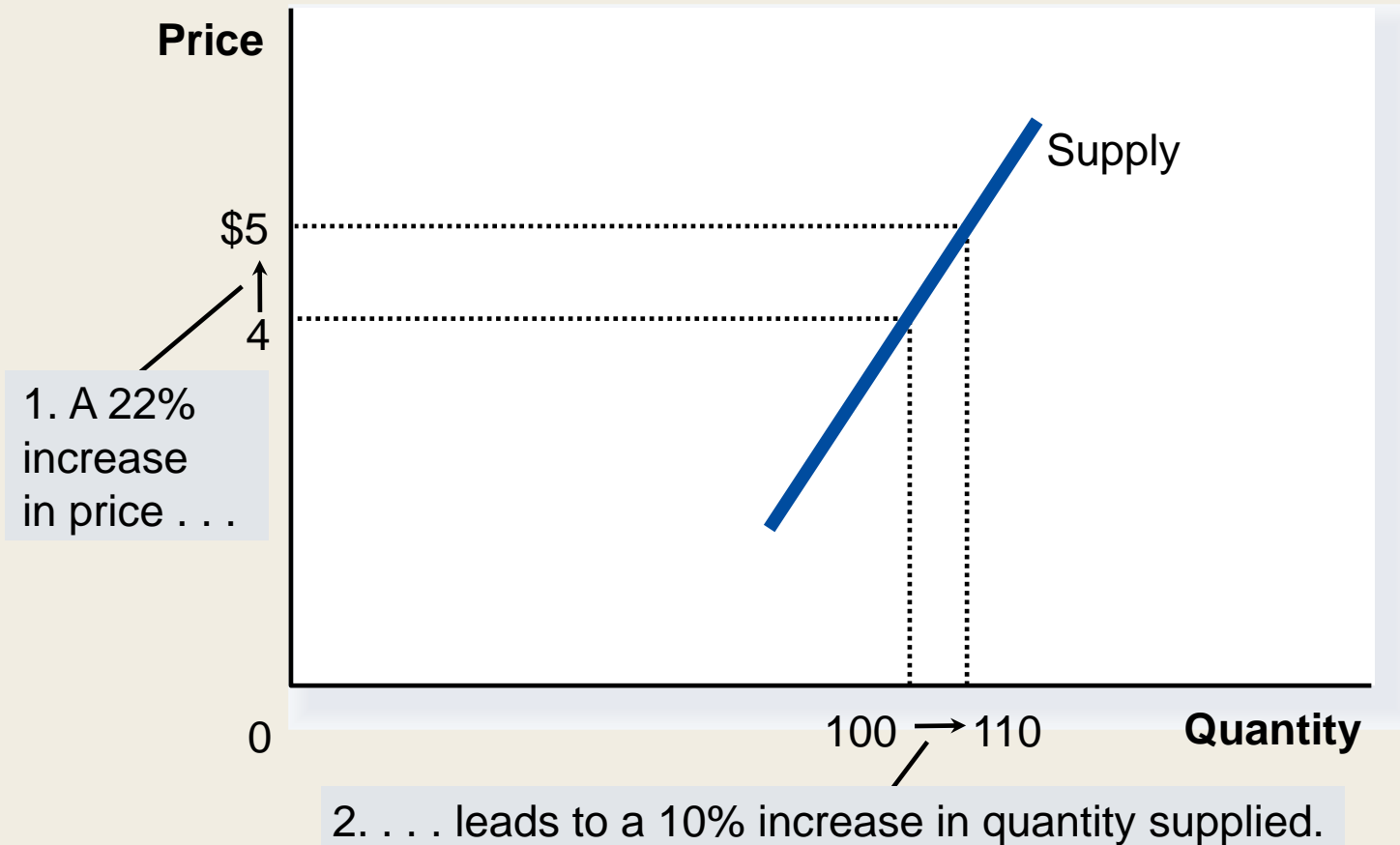


Figure 5 The Price Elasticity of Supply

(c) Unit Elastic Supply: Elasticity Equals 1

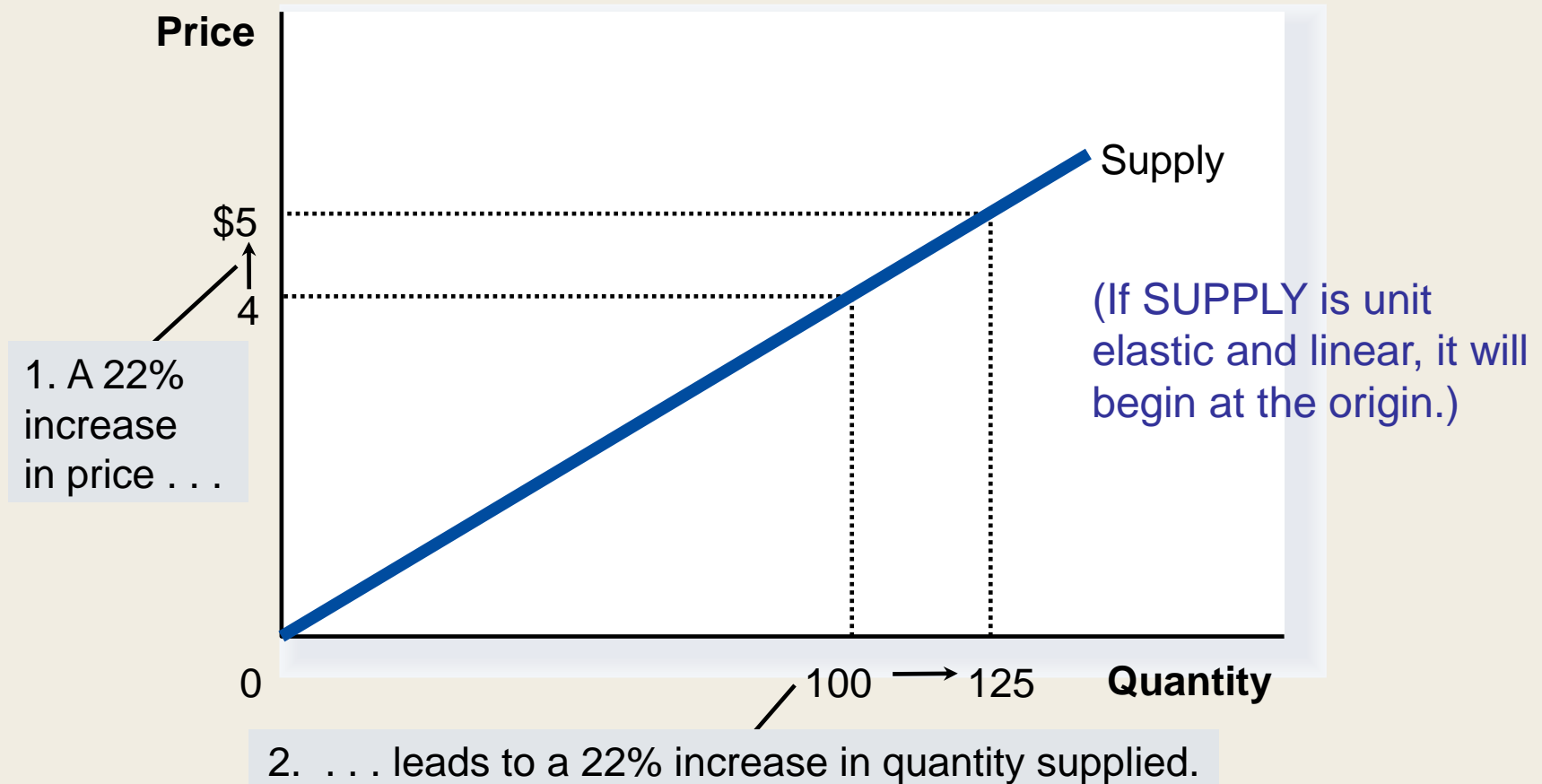


Figure 5 The Price Elasticity of Supply

(d) Elastic Supply: Elasticity Is Greater Than 1

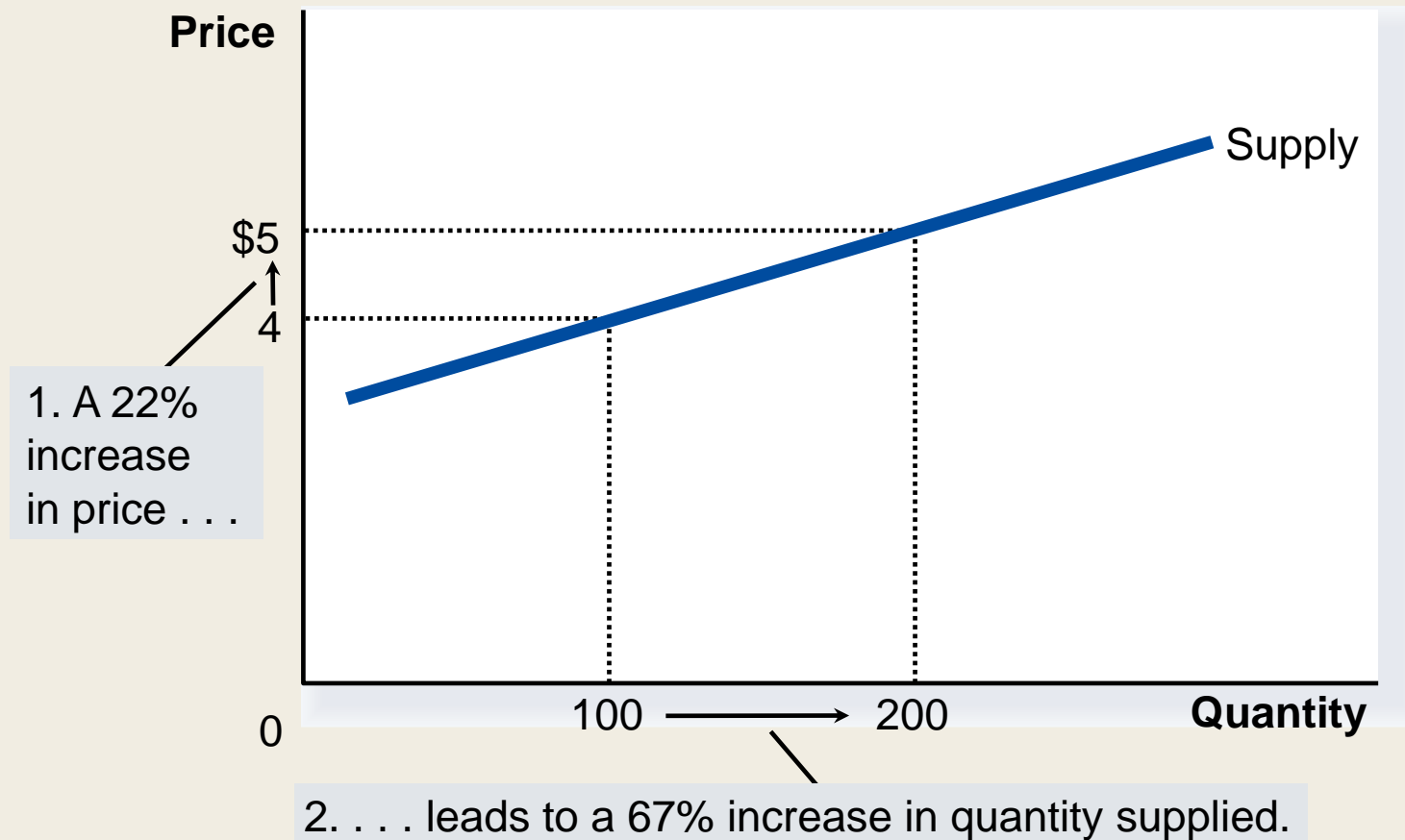
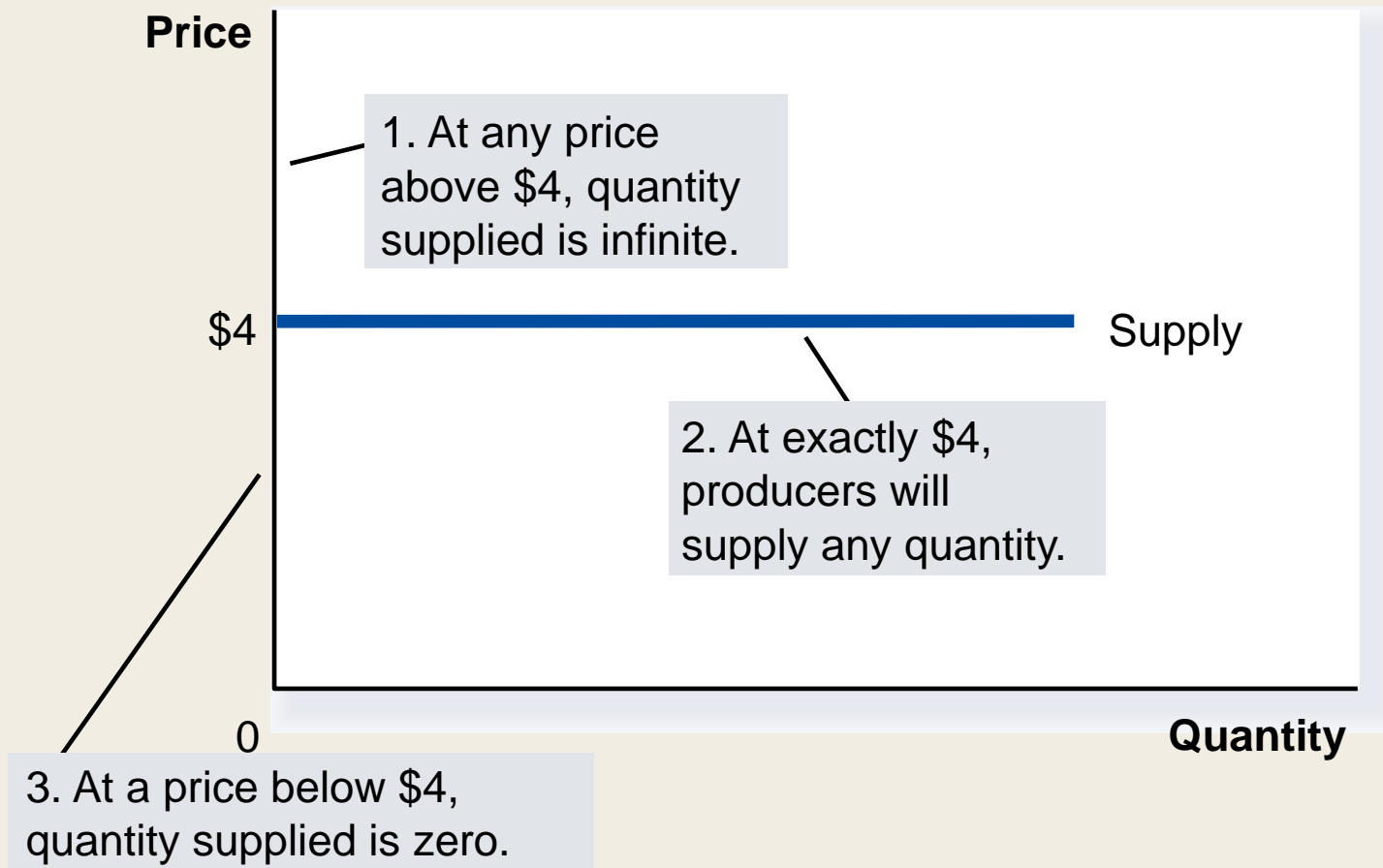


Figure 5 The Price Elasticity of Supply

(e) Perfectly Elastic Supply: Elasticity Equals Infinity



The Price Elasticity of Supply and Its Determinants

- Ability of sellers to change the amount of the good they produce.
 - Beach-front land is inelastic.
 - Books, cars, or manufactured goods are elastic.
- Time period
 - Supply is more elastic in the long run.

Computing the Price Elasticity of Supply

- The price elasticity of supply is computed as the percentage change in the quantity supplied divided by the percentage change in price.

$$\text{Price elasticity of supply} = \frac{\text{Percentage change in quantity supplied}}{\text{Percentage change in price}}$$



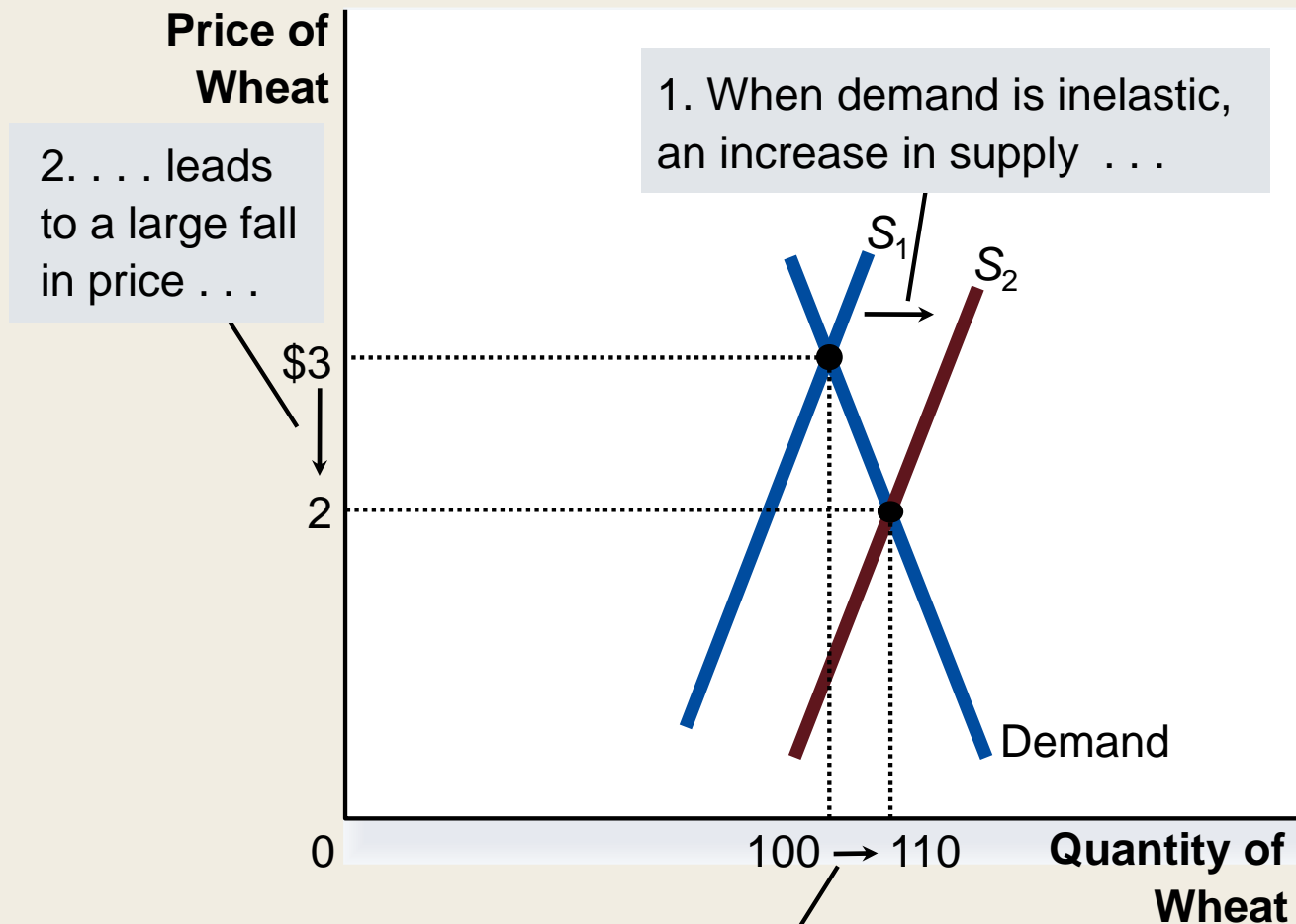
TWO APPLICATIONS OF SUPPLY, DEMAND, AND ELASTICITY

- Can good news for farming be bad news for farmers?
- What happens to wheat farmers and the market for wheat when university agronomists discover a new wheat hybrid that is more productive than existing varieties?

Can Good News for Farming Be Bad News for Farmers?

- Examine whether the supply or demand curve shifts.
- Determine the direction of the shift of the curve.
- Use the supply-and-demand diagram to see how the market equilibrium changes.

Figure 7 An Increase in Supply in the Market for Wheat



Compute the Price Elasticity of Demand When There Is a Change in Supply

$$E_D = \frac{\frac{100 - 110}{(100 + 110) / 2}}{\frac{3.00 - 2.00}{(3.00 + 2.00) / 2}}$$
$$= \frac{-0.095}{0.4} \approx -0.24$$

Demand is inelastic.

Why Did OPEC Fail to Keep the Price of Oil High?

- Supply and Demand can behave differently in the short run and the long run
 - In the short run, both supply and demand for oil are relatively inelastic
 - But in the long run, both are elastic