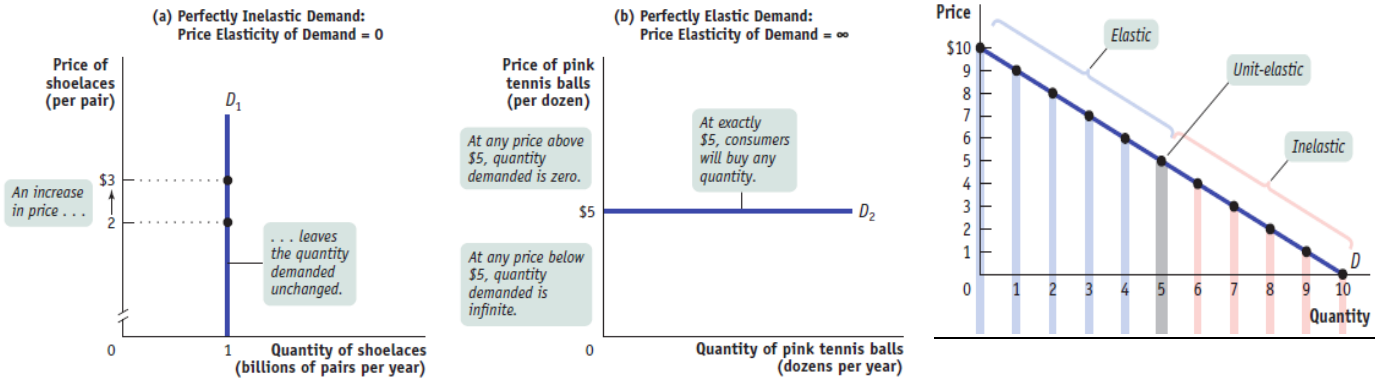
SECTION 9: Behind the Demand Curve: Theory of Consumer Choice
Need to Know:

Calculating elasticity

- **Elasticity is the % change in the dependent variable divided by the % change in the independent variable (%Δdep/%Δind)**
- **Price Elasticity Of Demand is the percentage change in quantity demanded divided by the percentage change in the price (Ed = $\%\Delta Q_d/\Delta P$) note: we drop the negative sign for Ed only.**

Midpoint Formula:

$\%\Delta Q_d$ = 100*(New Quantity – Old Quantity)/Average Quantity
%ΔP = 100*(New Price – Old Price)/Average Price
Ed = $\%\Delta Q_d/\Delta P$



Total Revenue and Elasticity

TR = P x Q

- ***A price effect:* After a price increase, each unit sold sells at a higher price, which tends to raise revenue.**
- ***A quantity effect:* After a price increase, fewer units are sold, which tends to lower revenue.**

What Factors Determine the Price Elasticity of Demand?

1. Substitutes for the product: Generally, the more substitutes, the more elastic the demand.
2. Whether the product is a luxury or a necessity: Generally, the less necessary the item, the more elastic the demand.
3. Share of income spent on the good: Generally, the larger the expenditure relative to one's budget, the more elastic the demand, because buyers notice the change in price more.
4. The amount of time involved: Generally, the longer the time period involved, the more elastic the demand becomes.

Cross-price elasticity of demand refers to the effect of a change in a product's price on the quantity demanded for another product.

Exy = %Δ Qd of X / %Δ P of Y

- **Substitutes (positive)**
- **Complements (negative)**
- **cross elasticity is zero, then X and Y are unrelated, independent products**

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Income elasticity of demand refers to the percentage change in quantity demanded which results from some percentage change in consumer incomes.

Ei = %Δ Qd / %Δ I

- **Normal good (positive)**
- **Inferior good (negative)**

The Law of Supply says that when the price of a good increases, firms will increase quantity supplied.

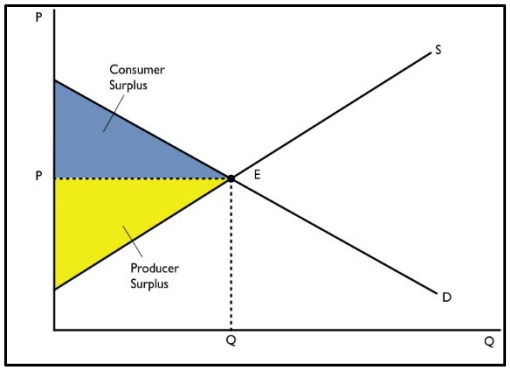
Es = %Δ Qs / %Δ P

- **If E_s >1, supply is considered elastic.**
- **If E_s < 1, supply is considered inelastic.**
- **If E_s = 1, supply is considered unit elastic.**

Factors that determine the price elasticity of supply

- **Availability of inputs: If a firm can get inputs (labor, capital, raw materials) into and out of production quickly, the Es will be more elastic.**
- **Time period: The "market period" is so short that elasticity of supply is inelastic; it could be almost perfectly inelastic or vertical.**

Anytime a consumer pays less than his/her willingness to pay, it is Consumer Surplus.



Producer Surplus measures the difference between the price producers receive for a good and the cost of producing the good

Changes in Price affect Consumer and Producer Surplus

If price decreases:

- **Consumer surplus increases (willingness to pay is the same, but the price paid is lower)**
- **Producer surplus deceases (costs are the same, but the price received is lower)**

If price increases:

- **Consumer surplus decreases (willingness to pay is the same, but the price paid is higher)**
- **Producer surplus increases (costs are the same, but the price received is higher)**

Total Surplus = Consumer Surplus + Producer Surplus