



Tecnológico de Monterrey

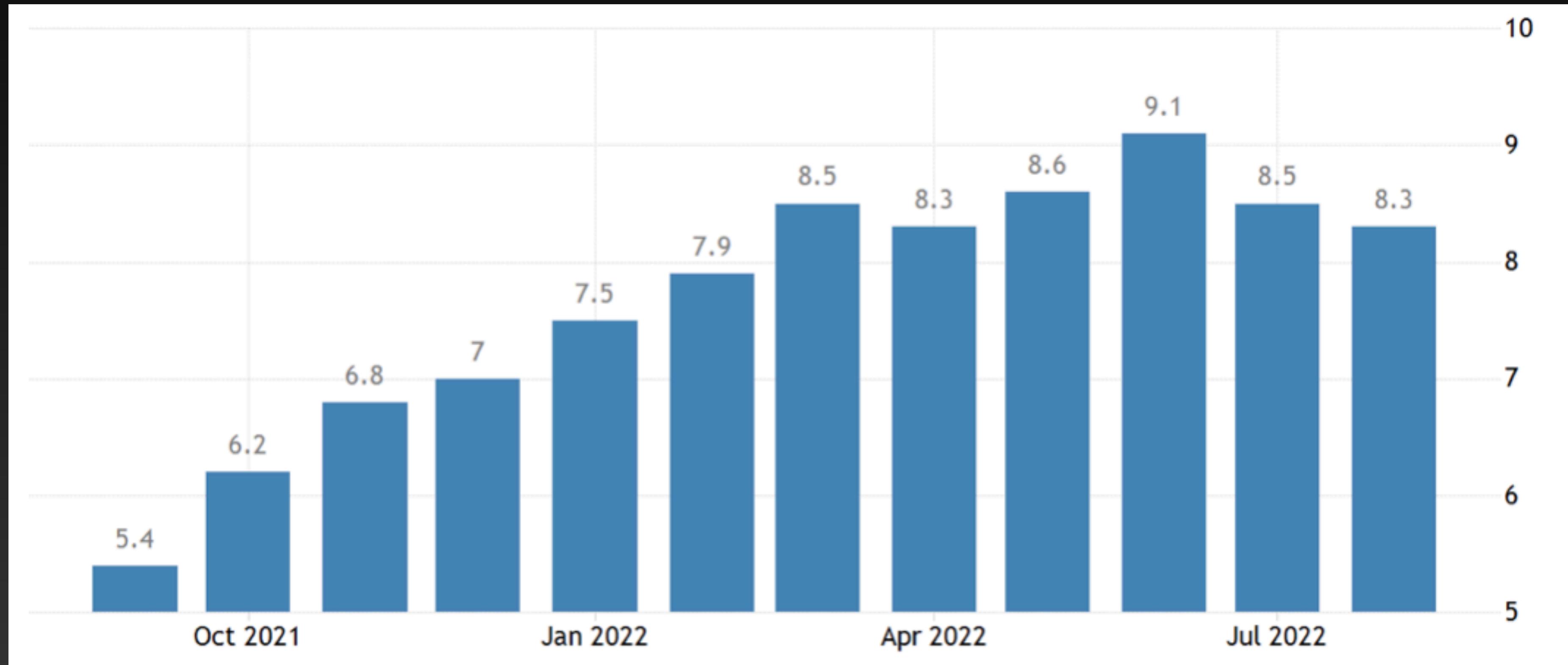
Intelligent Systems - Economy

Controlling the Economy with Decision Trees

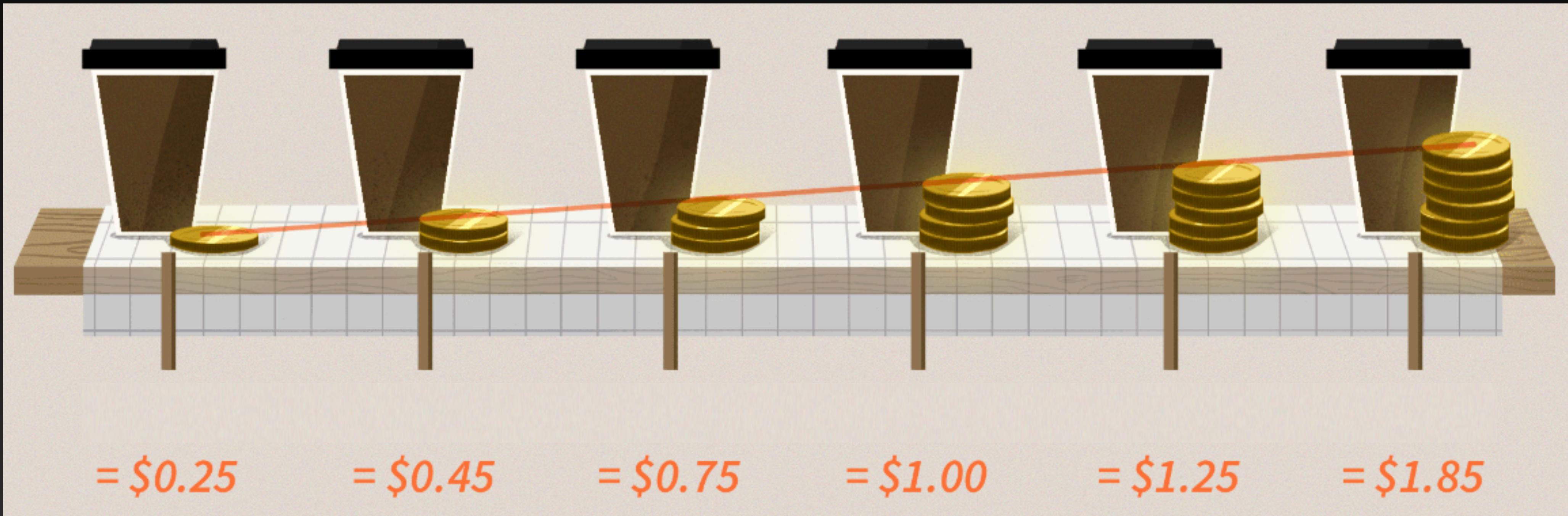
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PROBLEM

Average increase of 9% in basic products and services in the United States



INFLATION



Pay more for the same

CONTROL PRICES

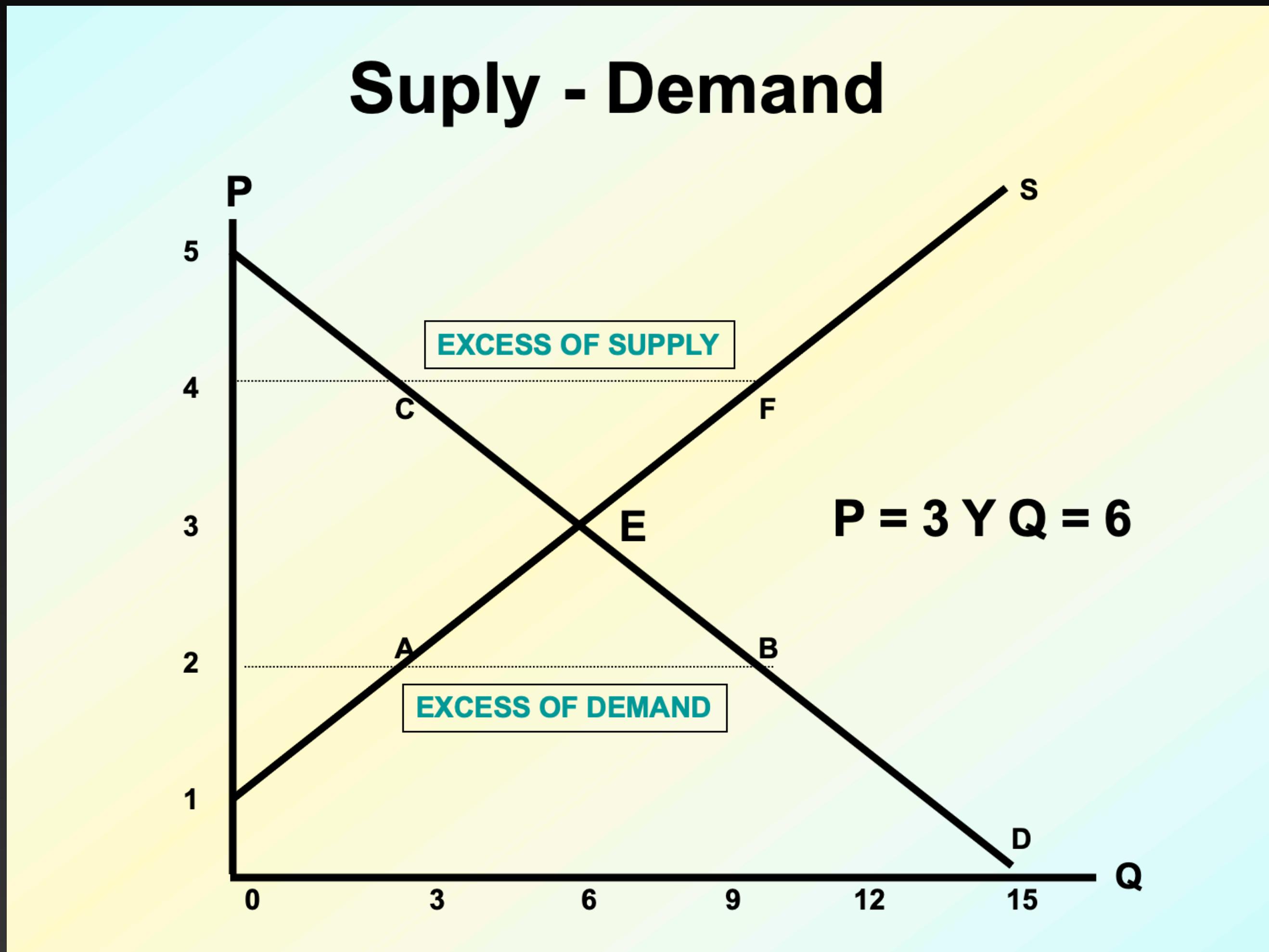
Inflation is due to an imbalance between supply and demand.

The factors that affect the supply and demand are: elasticity, inelasticity, normality, inferiority, complementarity and substitutive.

Rules for Controlling Prices:

- Government cannot establish roof or floor prices.
- Roof prices benefit consumers, but affect producers and cannot longer provide employment.
- Floor prices benefit producers, but affect consumers.
- Find equilibrium, which benefit consumers and producers.
- To control the prices, the government must do it through importations and exportations, in order to establish the balance between supply and demand.

Supply - Demand



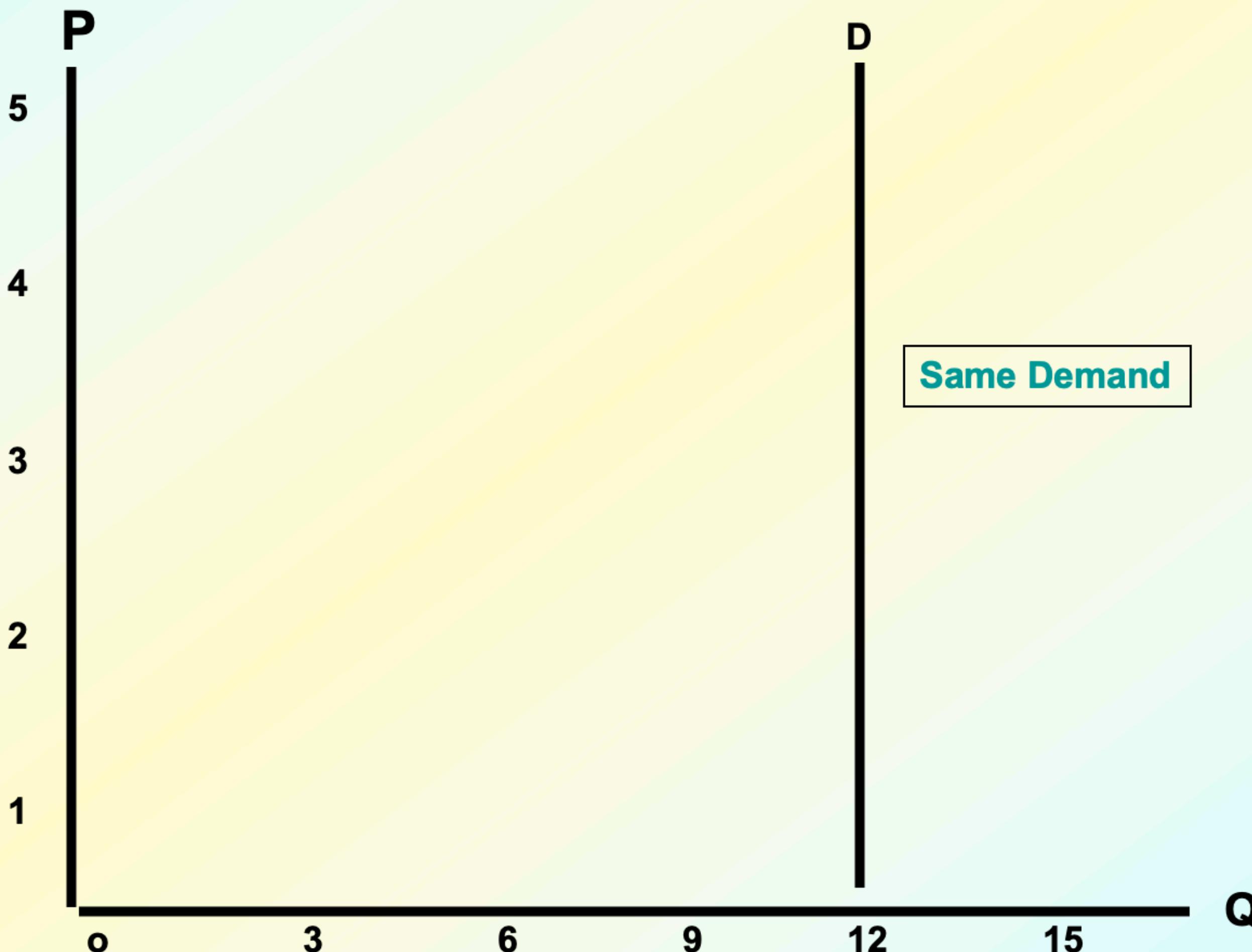
TASKS

- **Help the government to maintain the appropriate prices, by helping the government to take the correct decisions concerning the basic products and services.**
- **Classify and predict which products should import, export, reserve, and keep-normal the government, depending on the value of their:**
 - 1. Elasticity - Inelasticity**
 - 2. Normality - Inferiority**
 - 3. Complementary - Substitutes**

Inelasticity



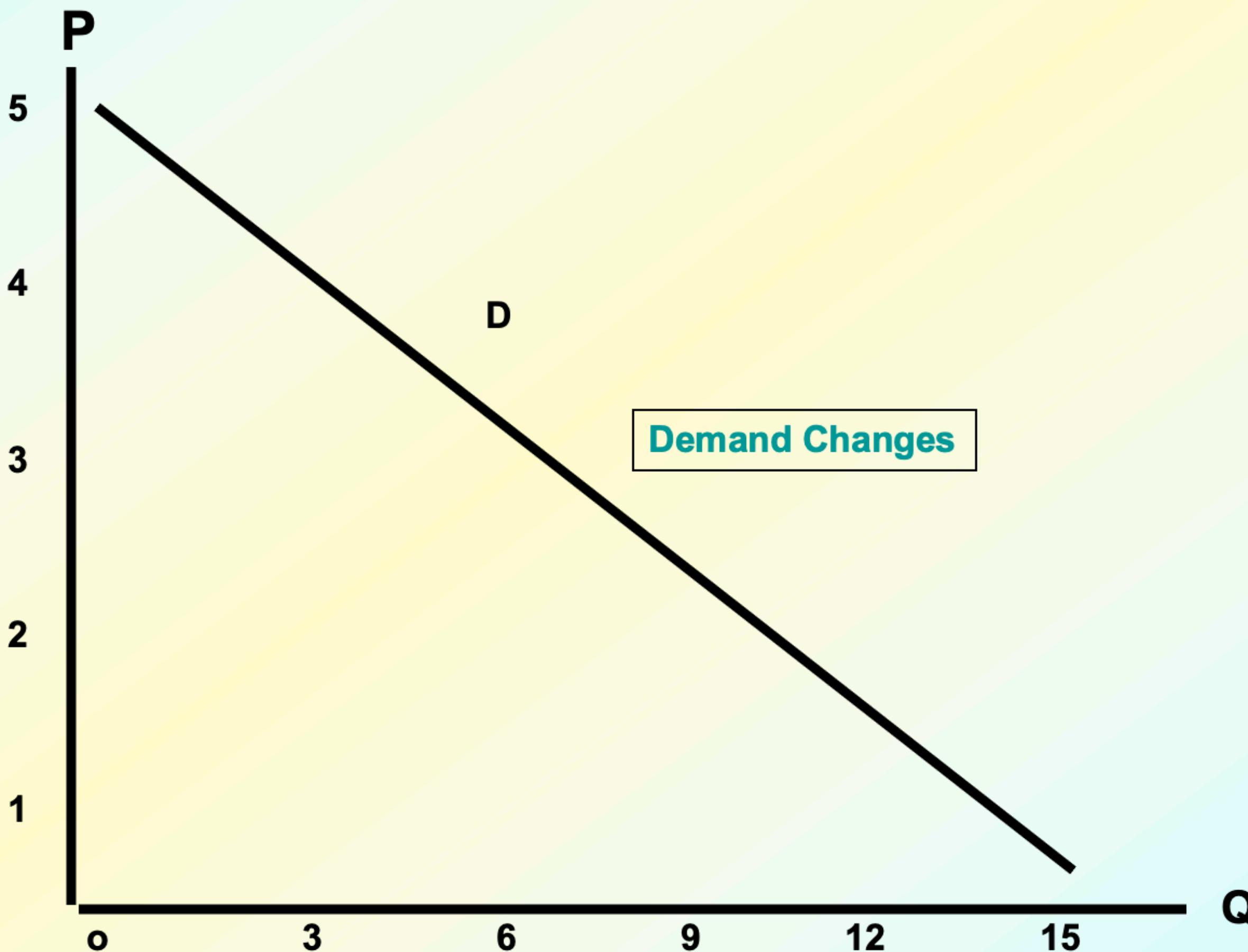
Inelasticity



Elasticity



Elasticity



Substitute - Complementary



Chips



Complementary
(Hot Sauce)



Substitute
(French Fries)



Normal - Inferior



Normal
(Salmon)



Inferior
Tuna Fish

Formulas



DATSET



PT - PED - SC - NI - SC - AT

EGGS - EXAMPLE

Product Type from CB	Elasticity - Inelasticity	Substitute - Complementary	Normal - Inferior	Supply Change
0.29	1.50	1	1	-0.45

Actual Case: Government imported eggs from Argentina and South Africa and annulled the “aranceles”, because it is an elastic product.

GAS EXAMPLE

Product Type from CB	Elasticity - Inelasticity	Substitute - Complementary	Normal - Inferior	Supply Change
0.51	0.15	1	1	-0.25

Actual Case: Government has implemented a subsidy to gas prices, because it is an inelastic product.

WATER EXAMPLE

Product Type from CB	Elasticity - Inelasticity	Substitute - Complementary	Normal - Inferior	Supply Change
0.54	0.00	1	1	0.10

Actual Case: Government put the extra water in a reserve, because it is a highly inelastic product.

MILK PODWER EXAMPLE

Product Type from CB	Elasticity - Inelasticity	Substitute - Complementary	Normal - Inferior	Supply Change
0.09	1.65	1	0	0.0

Actual Case: Government kept the market the same, because it is an inferior product and its elasticity is big.