

Formulas

Unit 1

Opportunity Cost

Output Problem

$$\text{Opportunity Cost of Good } A = \frac{B}{A}$$

$$\text{Opportunity Cost of Good } B = \frac{A}{B}$$

Input Problem

$$\text{Opportunity Cost of Good } A = \frac{A}{B}$$

$$\text{Opportunity Cost of Good } B = \frac{B}{A}$$

Price Floor and Ceiling

Price Ceiling

$$Q_d - Q_s = \text{Size of shortage}$$

Price Floor

$$Q_s - Q_d = \text{Size of surplus}$$

Unit 2

GDP

$$\text{GDP} = \frac{\text{Real GDP} \times \text{GDP Deflator}}{100}$$

$$\text{Real GDP} = \text{Current year production} \times \text{base year prices}$$

$$\text{GDP deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$$

$$\text{Growth rate} = \frac{\text{Year 2 Real GDP} - \text{Year 1 Real GDP}}{\text{Year 1 Real GDP}} \times 100$$

Unemployment Rate

$$\text{Unemployment Rate} = \frac{\text{Number of unemployed people}}{\text{Number of people in the labor force}} \times 100$$

$$\text{Labor force participation rate} = \frac{\text{Number of people in the labor force}}{\text{Population}} \times 100$$

$$\text{Cyclical Unemployment Rate} = \text{Actual Unemployment Rate} - \text{Natural Unemployment Rate}$$

Consumer Price Index

$$\text{CPI} = \frac{\text{Given Year Market Basket Cost}}{\text{Base Year Market Basket Cost}} \times 100$$

You must use base year quantities.

Inflation Rate

$$\text{Inflation Rate} = \frac{\text{Year 2 CPI} - \text{Year 1 CPI}}{\text{Year 1 CPI}} \times 100$$

Nominal vs. Real

$$\text{Real} = \frac{\text{Nominal}}{\text{Deflator}} \times 100$$

Unit 3

Propensity

Average

Letter	Meaning
C	Consumption
S	Saving

Letter	Meaning
Y	Income

Consume

$$APC = \frac{C}{Y}$$

Save

$$APS = \frac{S}{Y}$$

$$APC + APS = 1$$

Marginal

$$MPC = \text{Marginal Propensity to Consume} = \frac{\Delta C}{\Delta Y}$$

$$MPS = \text{Marginal Propensity to Save} = \frac{\Delta S}{\Delta Y}$$

$$MPC + MPS = 1$$

Expenditure Multiplier

$$\text{Multiplier} = \frac{1}{1-MPC} = \frac{1}{MPS}$$

Tax Multiplier

$$\text{Tax multiplier} = -\frac{mpc}{1-mpc}$$

Unit 4

$$\text{Rate of Return} = \frac{\text{Change in value of an asset}}{\text{initial value}} \times 100 = \text{R.O.R}$$

$$(M)(V) = (P)(Y)$$

M = Money Supply (M_1)

V = Velocity (# of times changes hand/year)

P = Price Level

Y = Real GDP

$$\text{Money Multiplier} = \frac{1}{\text{Reserve Requirement}}$$

$$\text{Nominal Interest Rate} = \text{Real Interest Rate} + \text{Inflation}$$