commerce
undergraduate
society

ECON 102 (RATNA)

MIDTERM EXAM REVIEW SESSION

BY PHUONG VU

TABLE OF CONTENT

INTRODUCTION

- **Phuong Vu, second year Academic Consultant** planning to major in Accounting and Business Technology Management. I'm also a **Commerce Tutor** at **AMS Tutoring.**
    - Macroeconomics is not an extremely challenging course. To ace the exam, you need to know the key terms, the formulas for calculations, and most importantly to me, the graphs, since graphs in ECON 102 show how economic variables are related to each other.
    - I did not take ECON 102 with Professor Ratna Shrestha, however, I took COMM 295 – Managerial Economics with him last semester and became familiar with his teaching styles.
- The review materials created for this session was tailored based on Ragan textbook, Professor Ratna's slides and practice midterm up to Chapter 25.
- I will be going over the key terms and formulas, before we move on to a few sample problems. I will also hold office hours on **Monday, February 27th**, so you're very welcome to come with any extra questions!
- Please note that CMP also provides **an extra problem** set tailored for this review session, however, we will not be going over them today due to the interest of time. The answer to this extra problem set will be posted after the session, together with the answer to this review booklet. If you have any questions about the extra problem set, feel free to come and find me during office hours on Monday!

REVIEW OF KEY TERMS AND FORMULAS

CHAPTER 19: KEY MACROECONOMICS VARIABLES

1. **National output and Income:**

   Nominal national income:

   Nominal national income =

   Real national income:

   Real national income =

   *Please note, one of the most commonly used measures of national income is **Gross Domestic Product** (GDP), which can be measured in both nominal and real terms.*

2. **Potential output/GDP (Y*):**

   Output Gap:

   Recessionary Gap:

   Inflationary Gap:

3. **Employment:**

   Unemployment:

   Labour force:

   Unemployment rate (%) =

4. **Inflation:**

   Rate of Inflation (%) =

5. **Interest rate:**

6. **Consumer Price Index (CPI):**

   CPI =

CHAPTER 20: THE MEASUREMENT OF NATIONAL INCOME

1. **Value Added = Sales Revenue – Cost of intermediate goods**

   Intermediate goods:

   Final goods:

2. **GDP Calculation:**

   <u>GDP from the Expenditure side:</u>

   GDP = C + I + G + NX

   In which:
   C =
   I =
   G =
   NX =

   <u>GDP from the Income side:</u>

   GDP = Factor Incomes + Non-Factor Payments

   In which:
   Factor Incomes consist of

   Non-factor Payments consist of

3. **GDP Deflator:**

   GDP Deflator =

CHAPTER 21 + 22: SIMPLE SHORT-RUN MACRO MODEL

1. **Consumption Function:**

   Some ratio that relates to AE model:

Average Propensity to Consume (APC) APC =	Marginal Propensity to Consume (MPC) MPC =
Average Propensity to Save (APS) **APS =**	**Marginal Propensity to Save (MPS)** **MPS =**

2. **The AE Function (in an economy with trade and government):**

   If we were given C = c + MPC *(1-t) Y_D, I, G, X, mY.

   Then, **AE =**

   In this function**, autonomous consumption =**

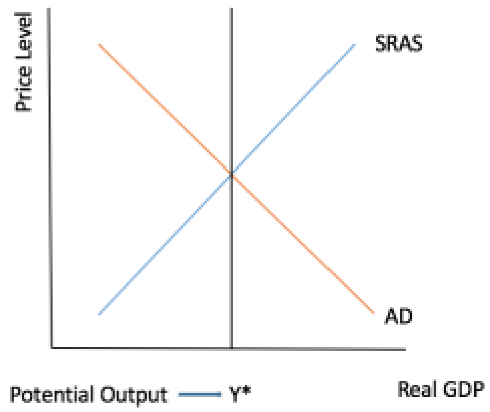
   Induced expenditure =

3. **Equilibrium National Income Condition: AE = Y**

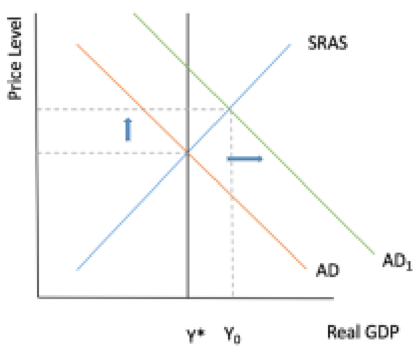
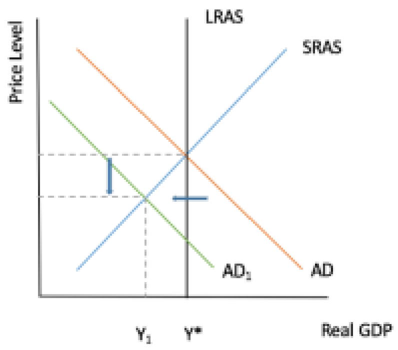
4. **Simple Multiplier =** $\frac{1}{1-z}$, in which **z =** (with Government and Trade)

CHAPTER 23 + 24: AD/AS: FROM THE SHORT-RUN TO LONG-RUN

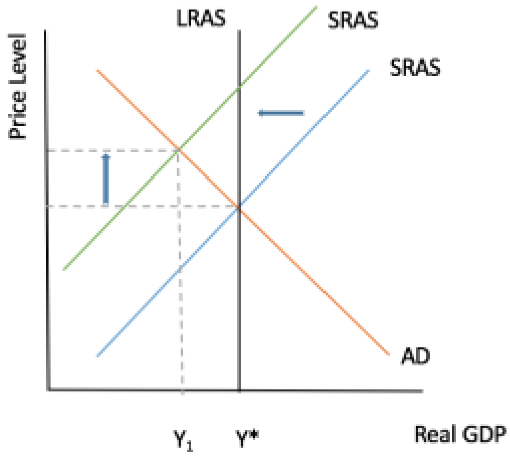
AD/AS Model:



Shocks in AD/AS:

Expansionary AD Shock:	**Contractionary AD Shock:**
	

Aggregate Supply Shocks: (Example: Negative AS Shock)



Fiscal Stabilization Policy:

PRACTICE PROBLEMS

Question 1 (2 marks):

You are the owner of a Cotton Candy factory that headquartered in Candyland which generates a $10 million revenue. The annual total cost of your factory is $8 million, which includes $4 million to workers at the factory, $1 million for interest payment, $2 million to sales tax and $1 million to depreciation. Your firm supports sustainability, hence was approved for a cost reduction of $1 million.

Requirement:

Calculate GDP for this Cotton Candy firm using the income approach to Accounting.

Question 2: (2 marks)

As the Chief Economic Officer of Fisherland, you are given the following data:

	2005		2010	
Items	Quantity	Price	Quantity	Price
Fish	10	2	25	3.5
Nuts	50	1.5	75	1.75

Requirement:

Using 2005 as the base year, calculate CPI in 2010. What does this CPI imply?

Question 3 (6 marks):

The Country of Many Penguins (CMP) has recently released a document with key economic variables in 2016 as below:

CMP's President, Mr. Grump is now considering to enable some new trade deals between CMP and its neighbor countries, and he asks you – the Chief Economic Officer, to compute some measurements of current economic performance to tailor the deals to the economic trends.

Economic Variables	Amount in 2016 Dollars ($ billions)
Consumption expenditure	990.5
Government expenditure	770.2
Wages, salaries and supplement incomes	950.5
Interest and investment incomes	428.5
Investment expenditure	112.1
Depreciation	50.2
Business profits	301.4
Exports	200.7
Indirect taxes	293.2
Imports	150.0
Subsidies	100.3

Requirements:

1. Compute GDP for Country of Many Penguins from the Income side.

2. Compute GDP for Country of Many Penguins from the Expenditure side.

3. President Grump is considering to increase Government expenditure by $221.3 billion, while increasing indirect taxes by the same amount. Suppose that the country is now in budget balance, will these two adjustments affect the GDP of CMP, and why does President Grump wants to increase these two accounts at one time?

Question 4 (5 marks):

BeeBee Island is a small country that only produces two goods: Mango Candy and Maple Syrup. Recently, Ministry of Commerce released the following information about the two-and-only goods produces by BeeBee-ians:

	Amount produced (units)		Unit price ($)	
	Year 1	Year 2	Year 1	Year 2
Mango Candy	2350	1200	2	3.5
Maple Syrup	3320	3122	1.5	1.75

Requirements:

1. Compute nominal GDP for year 1 and year 2 in BeeBee island. (2 marks)

2. Using year 1 as the base year, compute real GDP and the GDP deflator for each year. Identify a factor that causes the different between the real GDP and nominal GDP between the two years. (3 marks)

Question 5 (10 marks):

Country of Many Penguins located in a small island to the north west of Canada, however, the country has a very powerful government, along with many foreign trades deals with its neighbours. Autonomous consumption for CMP is $250 million, marginal tax rate is 20%, government expenditure is $200 million, exports is $100 million, investment is $180 million, marginal propensity to consume is 0.9 and import is 0.3Y.

Requirements:

1. Write the Aggregate Expenditure function for CMP. Identify autonomous and induced expenditure components of the function. (3 marks)

2. Identify the equilibrium condition for Aggregate Expenditure, then, calculate the Equilibrium National Income for CMP. Draw a graph to support your answers. (3 marks)

3. Calculate the multiplier for CMP. Remember, z=MPC(1 - t) - m (1 mark)

4. The country is considering to increase tax rate from 20% to 25%. What is the potential effects of this change on CMP's Aggregate Expenditure function? Illustrate this change on the diagram from part 2. (3 marks)

Question 6 (5 marks):

Recently, businesses in Candyland have recognized an upturn in business confidence, as a result of the #itscandytime trend rising among its population, hence leading to an $100 million increase in investment. Candyland's Prime Minister Jay Bean is now discussing with his colleagues about the effects of this investment boom and what it has to do with Candyland's AD/AS model.

Requirements:

1. Draw Candyland's initial AD/AS model. Identify the potential output Y* on the graph. (1 mark)

2. What does the investment boom have to do with Candyland's AD/AS model? Using the Aggregate Expenditure function learned in Chapter 23, determine the change in AD/AS model and illustrate it in the graph drawn in part 1. (2 marks).

3. Prime Minister Bean wants to maintain Candyland's production is at Y*, however he realized that there exists a gap in between current Y_1 and Y*. Help Prime Minister Bean to determine two policies to bring the economy's output back to Y* (2 marks).

- END –