

NANYANG TECHNOLOGICAL UNIVERSITY
SCHOOL OF SOCIAL SCIENCES
SEMESTER 1 AY23-24
HE1002 MACROECONOMICS I
PROBLEM SET 1

Question 1

Over the next 50 years the Japanese population is expected to decline, while the fraction of the population that is retired is expected to increase sharply. What are the implications of these population changes for total output and average living standards in Japan, assuming that average labour productivity continues to grow? What if average labour productivity stagnates?

Question 2

The Bureau of Economic Analysis, or BEA, is a government agency that collects a wide variety of statistics about the U.S. economy. From the BEA's website (www.bea.gov), find data for the most recent year available on U.S. exports and imports of goods and services. Is the United States running a trade surplus or deficit? Calculate the ratio of the surplus or deficit to U.S. exports.

Question 3

Which of the following statements are positive and which are normative?

- a. If the Federal Reserve raises interest rates, demand for housing is likely to fall.
- b. The Federal Reserve should raise interest rates to keep inflation at an acceptably low level.
- c. Stock prices are likely to fall over the next year as the economy slows.
- d. A reduction in the capital gains tax (the tax on profits made in the stock market) would lead to a 10 to 20 percent increase in stock prices.
- e. Congress should not reduce capital gains taxes without also providing tax breaks for lower-income people.

Question 4

Which of the following would be studied by a macroeconomist? By a microeconomist?

- a. The worldwide operations of General Motors.
- b. The effect of government subsidies on sugar prices.
- c. Factors affecting average wages in the U.S. economy.
- d. Inflation in developing countries.
- e. The effects of tax cuts on consumer spending.

Question 5

Richland's real GDP per person is \$40,000, and Poorland's real GDP per person is \$20,000. However, Richland's real GDP per person is growing at 1 percent per year, and Poorland's is growing at 3 percent per year. Compare real GDP per person in the two countries after 10 years and after 20 years. Approximately how many years will it take Poorland to catch up to Richland?

Question 6

The “graying of America” will substantially increase the fraction of the population that is retired in the decades to come. To illustrate the implications for U.S. living standards, suppose that over the 56 years following 2016, the share of the population that is working returns to its 1960 level, while average labor productivity increases by as much as it did during 1960–2016. Under this scenario, what would be the net change in real GDP per person between 2016 and 2072? The following data will be useful:

	Average labour productivity	Share of population employed
1960	\$47,263	36.4%
2016	\$110,384	46.8%

Question 7

What is human capital? Why is it economically important? How is new human capital created?