

ECO 209Y
MACROECONOMIC THEORY
Solution to Problem Set 1-2
(Odd numbers only)

1. a) $GDP = C + I + G + (X - Q)$
 $= 273,081 + 91,744 + 112,986 + (137,459 - 132,879)$
 $= 482,391.$
- b) $NNP = GNP - \text{depreciation}$
 $GNP = GDP + \text{Investment income received from foreigners}$
 $\quad - \text{Investment income paid to foreigners}$
 $= 482,391 + 7,207 - 23,761$
 $= 465,837.$
- $NNP = 465,837 - 59,438$
 $= 406,399.$
- c) $NNI = GNP - \text{Indirect Taxes} - \text{Depreciation}$
 $= 465,837 - 53,825 - 59,438$
 $= 352,574.$
- d) $NDI = GDP - \text{Indirect Taxes} - \text{Depreciation}$
 $= 482,391 - 53,825 - 59,438$
 $= 369,128.$
- $NDI = \text{Wages and salaries} + \text{Corporate profits} + \text{Interest and Rents}$
 $\quad + \text{Income from Unincorporated Business}$
 $= 248,858 + 46,124 + 39,586 + 34,560$
 $= 369,128.$
3. a) $YD = C + S.$
 $S = YD - C = 100 - 85 = 15.$
5. b) $\text{National saving} = \text{Private saving} + \text{Public saving} = S + \text{Government budget surplus} = 15 - 7 = 8.$
5. c) $(S - I) = (G + TR - TA) + NX$
 $I = S - (G + TR - TA) - NX = 15 - 7 - 2 = 6.$
5. d) $GDP = C + I + G + NX$
 $G = GDP - C - I - NX = 120 - 85 - 6 - 2 = 27.$

5. a) The consumer price index (CPI) measures the cost in a given period of buying a fixed bundle of goods, representative of the purchase of consumers, relative to its cost in the base period.
- b)
$$\text{CPI} = \frac{(5 \times 30) + (3 \times 20) + (4 \times 6)}{120} \times 100 = 195$$
- c) 95 percent.
7. a) False. The CPI measures the cost of a representative household's consumption bundle (which includes imports) whereas the GDP-deflator is a more comprehensive measure of the prices of all goods and services produced in the economy. Rates of change in these indices vary due to the differences in their construction.
- b) False. A change in a country's nominal GDP is not a good indicator of a change in the welfare of its people, since nominal GDP can change solely due to inflation. In that sense, a change in its real GDP is a better indicator. But only if real GDP grows faster than population, will real income per capita increase. Therefore, a change in real GDP per capita would still be a better indicator of a change in a country's level of welfare than a change in the absolute level of real GDP. But a change in real GDP per capita still does not take into account changes in income distribution, changes in environmental quality, or changes in leisure, all of which influence the welfare of the people in a country. Therefore, we cannot say whether the welfare of Canadians has increased by more than that of Germans.
- c) True. (Let's make the simplifying assumption that the balance in the current account is equal to NX.) National income is defined as $Y = C + I + G + NX$. The four main components of aggregate demand are consumption (C), investment (I), government purchases (G) and net exports (NX). But if the spending on consumption, investment, and government purchases is greater than national income, it follows that net exports ($NX = X - Q$) must be negative, that is, imports (Q) must exceed exports (X), and the country must have a trade deficit.
- d) False. This statement would be true if a realtor sold your home, as the realtor would have provided a current service for which she would be paid. Transactions in existing assets such as artwork and residential housing do not create economic activity in an amount equal to the value of the sale. New home construction, on the other hand, is included in the calculation of current GDP as it does represent current economic activity.