HW4: Due on Sep. 26th before exam.

1. (Textbook, 7th edition, question 7)

The national saving is the sum of private saving and government saving. The private saving is the national income minus tax and consumption which is a function of disposable income. The government saving is its revenue minus its spending. Now the government raises taxes by $100 billion. If the marginal propensity to consume is 0.6, what happens to the following? Do they rise or fall? By what amount?

b. Private saving.
c. National saving.
d. Investment.

2. (Textbook, 7th edition, question 9)

Consider an economy described by the following equations:

\[ Y = C + I + G \]

\[ C = 250 + 0.75(Y - T) \]

\[ I = 1,000 - 50r \]

If \( Y = 5,000 \), \( G = 1,000 \), and \( T = 1,000 \), solve following questions:

a. In this economy, compute private saving, public saving (government saving), and national saving.
b. Find the equilibrium interest rate.
c. Now suppose that \( G \) rises to 1,250. Compute private saving, public saving, and national saving.
d. Find the new equilibrium interest rate.

3. Assume an economy has a production function: \( Y = AF(K, L) \), where \( A \) is productivity, \( K \) is capital, \( L \) is labor. The consumption function of the
economy is given by $C = MPC \times (Y - T)$, where $Y$ is the output, $T$ is tax and $0 < MPC < 1$. Also assume this is a close economy, which means the demand of the economy is composed by consumption, investment, and government spending: $Y = C + I + G$, where investment is a function of interest rate: $I = I(r)$. What is the effect of an increase in $A$ on equilibrium amount of saving, investment, and interest rate? Use graphs to show your results.