1) Using the saving and investment graphs for the small open economy, begin with a small trade deficit (S less than I at the global real interest rate $r^*$) and trace through the impact of the following:

a) Cut in taxes \{\textit{S shifts left, widens the deficit.}\}
b) Rise in the marginal propensity to consume (MPC) \{\textit{same as a}\}
c) Fall in the demand for domestic investment \{\textit{Investment curve shifts inward, lowers the deficit}\}
d) A cut in the taxes of the major economies in the rest of the world \{\textit{raises r*, lowers the deficit}\}

2) Consider an economy described by the following equations:

\[ Y = C + I + G + NX \]
\[ Y = 5000 \]
\[ G = 1000 \]
\[ T = 1000 \]
\[ C = 250 + 0.75(Y-T) \]
\[ I = 1000 - 50r \]
\[ NX = 500 - 500\epsilon \] (\(\epsilon\) is the real exchange rate)
\[ r = r^* = 5 \]

a) In this economy, solve for national savings, investment, the trade balance, and the equilibrium exchange rate.

\[ S = I = 750. \quad NX = 0. \quad \epsilon = 1 \]

b) Suppose now that $G$ rises to 1250. Solve for national saving, investment, the trade balance, and the equilibrium exchange rate. Explain what you find.

\[ S = 500. \quad I = 750. \quad NX = -250. \quad \epsilon = 1.5 \]

c) Now suppose that the world interest rate rises from 5 to 10 percent ($G$ is again 1000). Solve for national saving, investment, the trade balance, and the equilibrium exchange rate. Explain what you find.

\[ S = 750. \quad I = 500. \quad NX = 250. \quad \epsilon = 0.5 \]
3) Suppose that some foreign countries begin to subsidize investment by institution an investment tax credit.

a) What happens to world investment demand as a function of the world interest rate?
   \textbf{Rises.}

b) What happens to the world interest rate?
   \textbf{Rises.}

c) What happens to investment in our small open economy?
   \textbf{Falls.}

d) What happens to our trade balance?
   \textbf{Rises.}

e) What happens to our real exchange rate?
   \textbf{Falls.}

4) What will happen to the trade balance and the real exchange rate of a small open economy when government purchases increase, such as during a war? Does your answer depend on whether this is a local war or a world war?

\textit{The increase in government spending decreases government saving and, thus, decreases national saving; this shifts the saving schedule to the left. Given the world interest rate } \*{r}, \textit{the decrease in domestic saving causes the trade balance to fall.}

\textit{The decrease in national saving causes the } (S - I) \textit{schedule to shift to the left, lowering the supply of dollars to be invested abroad. The lower supply of dollars causes the equilibrium real exchange rate to rise. As a result, domestic goods become more expensive relative to foreign goods, which causes exports to fall and imports to rise. In other words the trade balance falls.}

\textit{The answer to this question does depend on whether this is a local war or a world war. A world war causes many governments to increase expenditures; this increases the world interest rate } \*{r}. \textit{The effect on a country’s external accounts depends on the size of the change in the world interest rate relative to the size of the decrease in saving. An increase in the world interest rate could cause a country to have a smaller trade deficit, or even a trade surplus.}