Problem 1 Consider a model economy which is described by the following consumption and investment functions: \( C(Y - T) = 25 + 0.9(Y - T) \), \( I(r) = 100 - 10r \), the money demand function: \( L(r, Y) = Y - 10r \), and the net export function \( N_X(e) = N_X_0 - e \) where \( N_X_0 \) is a constant and \( e \) represents the nominal exchange rate. Let \( P = 1 \). Take \( M^*, G \) and \( T \) as policy instruments over which the central bank of the model economy has control over. This model economy is a small open economy whose interest rate is fixed by the world interest rate \( r^* \).

(1) Suppose the economy operates a system of floating exchange rate.
   (1a) Solve for the equilibrium \( Y \) and \( e \).
   (1b) Show how a higher world interest rate affects domestic GDP and the equilibrium nominal exchange rate \( e \).
   (1c) Show how an expansionary fiscal policy affects \( Y \) and \( e \).

(2) Suppose the economy operates under a system of fixed exchange rates with \( e = \bar{e} \) where \( \bar{e} \) is a fixed constant.
   (2a) Solve for the equilibrium \( Y \).
   (2b) Show how a higher world interest rate affects domestic GDP.
   (2c) Show how an expansionary fiscal policy affects \( Y \).
   (2d) Show how a lower \( \bar{e} \) affects equilibrium \( Y \).