Question 1: (25 points)

Consider a closed economy where the consumption and investment functions are given by:

\[ C = 200 + 0.75(Y - T) \]
\[ I = 200 - 25r \]

Government purchases \( G \) and taxes \( T \) are such that \( G = T = 100 \). The real money demand function is given by:

\[ L^d = Y - 100r \]

The money supply \( M \) is 1000 and the price level \( P \) is 2.

a) Derive an equation for the IS curve. (5 points)

b) Derive an equation for the LM curve. (5 points)

c) Find the general equilibrium values of the real interest rate \( r \) and the income \( Y \). (5 points)

d) Find the government-purchases multiplier. (5 points)

e) Now suppose the money supply \( M \) rises to 1500. Will the real interest rate \( r \) and the income \( Y \) increase or decrease? (5 points)
Question 2: (30 points)

Analyze the long and short run effects on output $Y$ and prices $P$ of a fiscal expansion in which government expenditures $G$ increase but taxes $T$ are unchanged. How do the effects depend on

- whether prices are flexible or sticky
- whether the Fed reacts by keeping either interest rates or the money supply constant

Question 3: (25 points)

3.1 Lucas’ critique (5 points)
3.2 Calibration (5 points)
3.3 Adaptive Expectations (5 points)
3.4 Money-output correlation and reverse causation (5 points)
3.5 Keynesian Cross (5 points)