S10 - IS-LM problem

Problem 1

Consider the case of an economy described by the IS-LM model, for which we know the following data: the marginal propensity to consume c=0.7; the tax rate t= 0.16; b=1000; k=0.6; h= 2000; autonomous consumption C_0=30 bil.€; autonomous investments I_0=25 bil.€; G= 95 bil.€; autonomous taxes T_0=5 bil.€; real money supply= 80 bil.€; transfers to households are zero and the trade balance is balanced (NX = 0).

Determine:

a) The IS and LM equations both analytically and numerically.
b) The equilibrium point (Y^*, r^*), as well as the budgetary deficit (BD).
c) The government spending multiplier on the goods and services market α_G, as well as the budgetary policy Γ_{BP} and the monetary policy Γ_{PM} multipliers.
d) Determine the effects of a mixed policy to reduce government spending by 10 bil. € and also to increase transfers by 10 bil. € on the initial equilibrium point (Y^*, r^*) and on the budget deficit. Comment.
e) Propose a monetary policy with the aim of increasing the real interest rate by 1 percentage point (Δr= 0.01) and estimate its effect on the level of GDP.
f) The impact of an increase in the tax rate by 4 percentage points (Δt= 0.04) upon the initial equilibrium point (Y^*, r^*).