"Imagination is more important than knowledge!"-by Albert Einstein.

Problem #1: Aggregate Demand Saving the Jupiter
(Continued from last time) Careful as he is, Michael was kidnapped (We've said: Use your imagination!). There is a reason why Michael is kidnapped! The economy in Jupiter is experiencing a severe recession. Though technically advanced, they don't have any good economist. And there in this blue planet they found Michael and the 100 dollar bill in his pocket…

The economy in the Jupiter is described by (take the planet in its entirety as a closed economy):

$Y = C + I + G,$ $\qquad$ $C = 2{,}000 + 0.5(Y\text{-}T),$
$I = 10{,}000 - 40{,}000r,$ $\qquad$ $G = 2{,}000,$ $\qquad$ $T = 0.2Y$

And the supply and demand in the money market (sorry we don't know the name of their currency yet…)

$M_s = 1{,}000$
$M_d = 5{,}000 - 20{,}000r$

Where r is the interest rate written as a decimal (e.g., if the interest rate r equals 10% then it would appear in the equation as 0.1) and the required reserve ratio for demand deposit is 20%.

(a) Find the equilibrium interest rate

(b) Find the equilibrium investment level

(c) Find the equilibrium output level

(d) Suppose that the potential GDP (or full employment GDP) is 20,000, if you were Michael (He will tell you how fun it is on Jupiter), what suggestion would you have for the central bank of Jupiter, assuming you want to reach full employment GDP? (You don't need to get the exact numbers.)

(e) Suppose that Michael suggests a targeted interest rate of 5% (if you want to know how does Michael get this number, ASK Michael.), what specific action should be taken by Jupiter's central bank in order to reach this interest rate?

(f) Graph the money market and Keynesian cross diagram representing the above changes. Notice that the initial equilibrium output (real GDP) is lower than the long run macroeconomic equilibrium.

(g) Congratulations! You could have successfully solved the economic crisis in the Jupiter. But beware that since you are able to solve economic crisis, then…. Teach your friends around you some macroeconomics to lower the probability of you being kidnapped by aliens!

Problem #2: More AS-AD model
(a) Explain why the AS curve is upward sloping, and what could possibly shift the AS curve.

(b) Explain why the AD curve is downward sloping, and what could possibly shift the AD curve.

(c) Using AS-AD model, find at least another way to reach full employment equilibrium level in Jupiter. Show that not only Michael can save that planet.

Problem #3: Quota Review Problem (written for Michael)
Michael returns from the Jupiter and got popular on both the planets and he brings the missing $100 bill and gives it to his boss Malcolm. Malcolm hates Jupiter so he gives it to Jeff and Jeff in turn sells it to Chao at a price of $150. And Chao suggests the King (who is a fan of astrology) of Tropicia set up a quota for importing tuna, and then Chao himself buys the license by paying the King that historical $100 bill that has been to the Jupiter.

The MONTHLY demand and supply for tuna (in terms of lbs and $) in Tropicia is:
      Domestic Demand: $Q_d = 150 - P$ and
      Domestic Supply : $Q_s = 2P$
Modern fishery techniques outside of Tropicia permit the market price of tuna in the world market to be $30/pound. And the domestic price of Tuna is now $40/pound.

Suppose Chao has imported as many units of tuna as the quota license allows, how much revenue does he earn by owning this license and how many units of tuna are imported? If producers and consumers from Tropica could get damages from Chao due to the quota how much would Chao owe the people of Tropicia (what is foregone as a result of the quota versus free trade)?