Question 1

Consider the simple macro model with no government and no international trade. Suppose private sector desired consumption expenditure (C) is given by

$$C = c + \gamma \cdot Y$$

where c is some positive number, γ is the marginal propensity to consume out of disposable income (which in this simple model with no taxes is also GDP), and Y is real GDP. Desired investment expenditure (I) is given by

$$I = I^*$$

which is some positive number.

1. Consider the consumption function at the level of individual households. How would the value of γ likely differ for forward-looking as compared to short-sighted households? Given that the economy is made up of both types of households, what do you expect the value of γ to be for the aggregate economy?
2. Write down an equation for the (desired) aggregate expenditure (AE) function. Draw a diagram to show the AE function.
3. Write down the condition that determines the equilibrium level of real national income (GDP). Explain the intuition behind this equilibrium condition.
4. Solve this condition for the equilibrium level of GDP.
5. Now imagine there is an increase in business confidence that leads to an increase in the value of I^*. Construct a table that shows the first five rounds of activity, where each round shows the autonomous change in desired aggregate expenditure, the resulting actual change in production, and the induced change in desired aggregate expenditure (brought about by the actual change in output).
6. If this process went on for an infinite number of rounds, what would be the final change in output?
7. Explain – in jargon free language – why increases in private-sector desired spending can bring about booms in GDP. Also explain why decreases in desired spending can bring about recessions. This is the essence of the logic behind why the aggregate economy is capable of generating self fulfilling prophesies.

Question 2

Consider in what follows a model of an economy that has no trade with the rest of the world – it is a closed economy.

1. Suppose the price level exogenously falls. Explain the process whereby (short run) equilibrium GDP rises. Make sure to include what happens in the 45 degree line diagram.
2. Now explain why the AD curve is downward sloping in a diagram with P on the vertical axis and Y on the horizontal axis. Is it downward sloping for the same reasons that the demand curve for, say, carrots is downward sloping?

3. In a diagram in (P,Y) space, explain what determines aggregate output for a given price level. Is output demand determined?

Question 3

A company's wages and salaries are part of its value added. Suppose, however, that the cleaning that its own employees used to do is now contracted out to specialist firms who come in to do the same work more cheaply.

1. What happens to the company's value added when a company follows this recent trend of "contracting out" ?

2. What happens to value added in the economy as a whole?

Question 4

Consider a simple macro model, like the one we have been discussing in class, in which GDP is demand determined. The model is represented by the following equations:

$$\begin{aligned} C &= c + MPC \cdot Y \\ I &= I^* \\ X &= X^* \\ IM &= m + MPI \cdot Y \end{aligned}$$

As you can see, there is no government in the model. MPC is the marginal propensity to consume and MPI is the marginal propensity to import. I^*, X^*, c and m are all autonomous and positive.

1. Compute the equilibrium value of GDP (Y) when the parameters of the model take the following values (all values of autonomous variables in billions of dollars):

$$\begin{array}{cc} c = 10 & MPC = 0.8 \\ I^* = 20 & X^* = 40 \\ m = 5 & MPI = 0.15 \end{array}$$

2. What is the value of the multiplier? Explain intuitively how changes in MPC and MPI affect the value of the multiplier.

3. Now suppose there is an increase in the world demand for Canadian goods so that X^* rises permanently to \$60 billion. What is the new value of equilibrium GDP? What happens to the trade balance (net exports) as a result of this event? (Compare the initial value to the new value.)

4. Now suppose (with X^* still equal to \$60 billion) there is a heightened desire to consume imported goods when our GDP rises – that is, the MPI rises permanently to 0.25. Compute the new equilibrium value of GDP.