Econ 112 – Online – Assignment #2

This assignment covers material from Chapter 22 – Chapter 28 on your reading list.

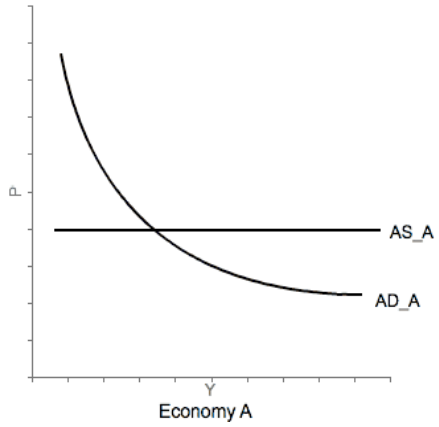
True, False, or Uncertain [48 marks - 6 marks each]

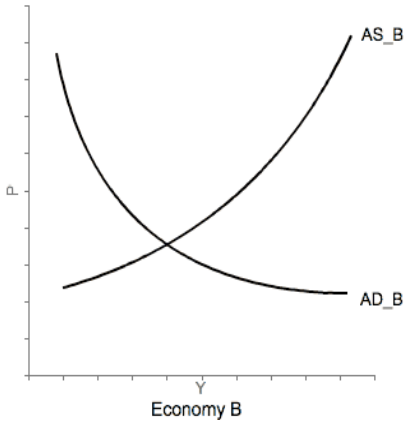
Explain why each of the following statements is True, False, or Uncertain according to the economic theory you have learned. **A diagram and/or a few lines of explanation should be sufficient.** Unsupported answers will receive no marks. It is the explanation that is important. [See the Practice Problems for sample questions/answers.

A2-1. If a country's real GDP (Y) is greater than it's potential level of GDP (Y*), the government can use fiscal policy to return GDP to it's optimal level. In particular the government can decrease the tax rate, which causes the aggregate expenditure curve to pivot downwards (become flatter), and thereby lowering equilibrium GDP to it's desired level, Y*.

False. In order for the government's fiscal policy to reduce actual GDP to the level of desired GDP, it must <u>increase</u> taxes. A tax increase will pivot the AE curve downward, and lower equilibrium GDP.

A2-2. The following diagrams show the AD and AS curves in two different economies. If there is an equal increase in autonomous expenditure in both economies, economy A will have a larger multiplier than economy B.





True. The multiplier in Economy A is equal to the simple multiplier (see Box "The Keynesian AS Curve" in Chapter 23 of textbook), the multiplier in Economy B is not equal to the simple multiplier because the price level is varying. The simple multiplier is equal to the size of the horizontal shift in the AD curve in response to a change in autonomous expenditure. When the AS curve is upward sloping, an aggregate demand shock leads to a change in the price level. The change in GDP is not equal to the horizontal shift in the AD curve, part of the change in demand is reduced by a change in price level. As a result, the multiplier is smaller than the simple multiplier.

A2-3. Suppose Canada's output currently equals its potential output. If there is an increase in demand for Canadian exports the aggregate demand curve will shift to the right and Canada will experience an inflationary output gap. Firm's unit costs start to rise and the aggregate supply curve will shift upward. Long run equilibrium will be restored with higher output and a higher price level.

False. The last sentence should read "Long run equilibrium will be restored at potential output and a higher price level". In the long run output must return to potential output, otherwise the economy is not yet in equilibrium.

A2-4. Suppose an economy's factor supply is 50 million units, its factor utilization rate is 0.70, and it's GDP per unit of input employed is $125. The economy's GDP will be $5 billion.

Flase. Using equation (25.2) GDP = L x (E/L) x (GDP/E), where L = factor supply (50 million), E/L is the factor utilization rate (0.70), and GDP/E is productivity.

GDP = 50*0.70*$125 = $4,375 million

A2-5. Though long- and short-run economic growth are determined by a different set of considerations, both long- and short-run economic growth can be influenced by fiscal and monetary policy.

False. All changes in GDP can be accounted for by changes in one or more of the following three variables: supply of factors, factor utilization rates, and factor productivity. Long-run changes in GDP are caused mostly by changes in factor supplies and factor productivity. Short run changes in GDP are caused mostly by changes in the factor utilization rate. Fiscal and monetary policy however, only affects GDP in the short run because they affect the level of demand, and thus the position of the AD curve. Policies would have to affect potential GDP to affect long-run growth.

A2-6. The following table describes an economy:

Potential GDP	$2500
Net Tax Revenue	$50
Government Purchases	$200
Investment	$100
Consumption	$2350
Net Exports	-$135

The level of private savings in this economy is $185 and the level of public savings is $150.

False.

Private Savings = Y* - T – C = $2500 - $50 - $2350 = $100

Public Savings =T - G = $50 - $200 = -$150

A2-7. The Bank of Canada serves a similar function as that of commercial banks in Canada.

False. The Bank of Canada is a central bank. Central banks serve four main functions: the banker of private banks, as a banker for the government, as the regulator of the nation's money supply, and as a regulator and supporter of financial markets. Private banks do not serve any of these four functions. Private banks hold deposits, invest in government securities, make loans to households and firms, and securitize loans, among other activities. The Bank of Canada does not perform these functions. Furthermore, the Bank of Canada does not transact with the general public or with firms, as private banks do.

A2-8. If the annual market rate of interest is 2 percent, an asset that promises to pay $100 after each of the next five years has a present value of $490.20.

False. PV = ($100/1.02) + ($100/(1.02^2)) + ($100/(1.02^3)) +($100/(1.02^5)) + ($100/(1.02^5)) + = $471.35

Problems [52 marks - marks for each part as shown]

A2-9. Analyze the effect each of the following events would have on the Canadian economy in both the short-and long-run. Be sure to explain what happens to output, the price level, and unemployment. In each case, begin with a short-run aggregate supply and aggregate demand equilibrium that is also a long-run aggregate supply and aggregate demand equilibrium.

(a) There is an unexpected and sharp reduction in desired business investment expenditure. [4]

This is a negative aggregate demand shock. In the short run the AD curve shifts lefts and down, real GDP and the price level both fall. In the long run, the AS curve adjusts and shifts right and down, real GDP is at its original level with a lower price level.

(b) There is an decrease in the Canadian-dollar price of all imported raw-materials. [4]

This is a positive aggregate supply shock. In the short run the AS curve shifts right and downward, real GDP increases and real prices fall. In the long run the AS curve adjusts back by shifting to the left and upwards, real GDP falls back to potential and prices rise.

(c) The Canadian government decreases it's spending so that instead of running a deficit, the government's budget is balanced. [4]

This is contractionary fiscal policy. In the short run the AD curve will shift left and downwards, decreasing GDP and decreasing the price level. The economy will be in a recessionary gap in the short run. As factor prices adjust the AS curve will shift to the right and down, real GDP will be returned to potential and the price level be lower. Additional, the long run composition of GDP may be altered. Recall Y = C+I+G+NX, the reduction in G must be equal to the increase in C+I+NX, to return Y to Y*. This will be driven by an increase in private expenditures.

(d) An expansion of the labour force occurs when Canada relaxes it's immigration restrictions. [4]

This is a positive aggregate supply shock. In the short run the AS curve shifts right and down, this lowers real GDP and lowers the price level. The increase in available labour bids down wages and reduces firms unit costs. In the long run the AS curve shifts back to it's original position, The LRAS curve shifts right.

A2-10 The balance sheet of Sydenham Bank is reported in the table below.

Sydenham Bank's Balance Sheet

Assets		**Liabilities**	
Reserves	$300	Deposits	$2000
Loans	$2200	Capital	$500
	$2500		$2500

(a) Assume Sydenham Bank is operating with no excess reserves. What is their reserve ratio? [2]

Reserve Ratio = Reserves/Deposits = $300/$2000 = 0.15 => 15%

For the remainder of the question assume that the reserve ratio found in (a) is the target reserve ration, and that a $400 deposit has just been made at Sydenham Bank.

(b) What is Sydenham Bank's *actual* reserve ratio immediately following this deposit? [2]

Total Deposits are now $2400

Total Reserves are now $700

Actual Reserve Ratio = $700/$2400 = 0.29167 => 29.17%

(c) Sydenham Bank does not want to operate with a reserve ratio higher than the target reserve ratio. Calculate the amount by which Sydenham Bank will expand it's loans in order to return to the target reserve ratio following this deposit. [4]

The target reserve ratio is 15%.

With the new level of deposits, $2400, we can first figure out what the target amount of reserves Sydenham Bank will choose to hold:

Reserves = optimal reserve ratio * deposits = $2400*0.15 = $360

With $2400 in deposits, Sydenham bank is required to hold $360 in reserves.

Given that Sydenham Bank already has $300 in reserves, it only needs to increase it's reserves by $60 ($360 - $300).

The amount by which the Bank can increase it's loans is equal to the increase in deposits, minus the required increase in reserves: $400-$60 = $340.

(d) Assume that all commercial banks in Canada have the same target reserve ratio. Following this deposit made at Sydenham Bank, calculate the total new deposits created in the banking system. [4]

Change in deposits in the banking system = change in reserves/target reserve ratio

= $400/0.15

= $2666.67

(e) Canada has a reputation for requiring banks to have high reserve ratio's compared to their international counterparts. Briefly describe both the positive and negative consequences of the Canadian government imposing high reserve requirements. [4]

A2-11. The following questions deal with the relationship between money demand, interest rates, and investment in a closed economy.

(a) Draw a graph depicting money demand in an economy. Be sure your graph is well label. Assuming there are only two assets in the economy, money and bonds. Can the money demand curve tell you anything about the holdings of money and bonds in the economy? Briefly explain why or why not. [6]

See Figure 28-1 for the money demand curve. The MD curve shows the choice between bond and money holdings in an economy. We can expect that an individual with a given level of wealth will hold more money when the current interest rate is very low, and hold more bonds with the interest rate is high.

(b) Add money supply to the graph you created in (a). Assume the economy starts at monetary equilibrium. Show graphically what happens to the money supply and money demand curves when the economy experiences an increase in real GDP. Explain the mechanisms at work after this increase in GDP. Be sure to discuss any change in desired money and bond holdings, as well as what (if anything) is driving the change in GDP or interest rates. [6]

An increase in real GDP will shift the MD curve to the right and an increase in the interest rate. The MS curve will remain unchanged. At the original equilibrium i* there is excess demand for money. People try to sell some of their current bond holdings to satisfy their increased demand for cash. But there is only so much cash available. The effort in the aggregate to sell bonds drives the price of bonds down and thus causes the interest rate to rise, choking back the quantity of money demanded (an upward movement along the new MD curve). The adjustment continues until the existing supply of money is willingly held, at a new higher equilibrium interest rate.

(c) Assume the economy starts at monetary equilibrium. How will desired investment expenditure be affected if there is a decrease in the money supply? How will aggregate demand be affected? [6]

A decrease in money supply shifts the MS curve to the left, and leaves the MD curve unchanged. This leads to an movement up and along the desired investment curve. The interest rate will rise and desired investment expenditure falls.
We know that shifts in the AE and AD curve are caused by anything other than a change in the price level. The decrease in desired investment expenditure will shift the AE curve down by an amount equal to the change in investment expenditure. This will lower real GDP and lower desired aggregate expenditure. Assuming a fixed price level this will shift cause a leftward shift of the AD curve. Aggregate demand has been reduced.
A decreased in the money supply therefore increases the interest rate, decreases desired investment expenditure, and decreases aggregate demand.

(d) Assume the economy starts in monetary equilibrium and that the economy is now open. If there is a decrease in the money supply (as in part (c)) what will happen to capital flows? To the value of the economy's currency? [2]

A decrease in the money supply increases interest rates (as we saw in (c)), which leads to a capital inflow (foreigners want to take advantage of the higher return on bonds). This inflow of capital increases the demand for the currency (foreigners need

domestic currency to buy the domestic bonds), which leads to an appreciation of the currency.