Econ 112 – Online – Assignment #1

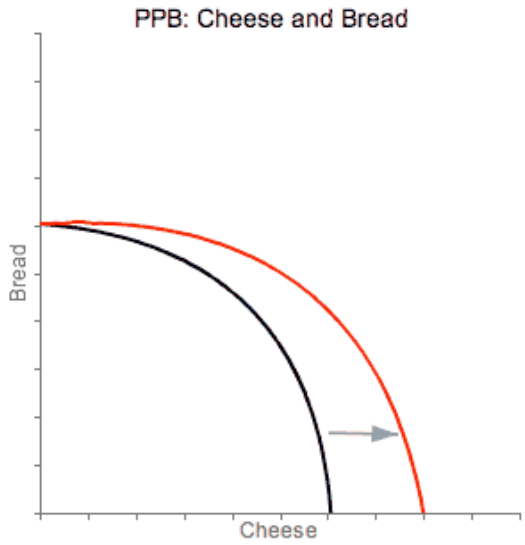
This assignment covers material up to and including Chapter 21 on your reading list.

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.]

A1-1. Suppose an economy produces only bread and cheese according to a non linear production possibilities curve. If there is a technological improvement that affects only cheese production, the economy could produce more of both goods.

True. A technological improvement that affects only cheese will cause the PPB to pivot outwards on the cheese axis (see red line on graph). The maximum amount of cheese that is able to be produced increases, the maximum amount of bread that is able to be produced stays constant, however there are new combinations of bread and cheese which allow for more production of each than what was previously possible. These combinations are anywhere on the red curve, or between the red and black curves.



A1-2. "In the long run there is no trade-off between inflation and unemployment, while in the short-run unemployment can be decreased at the cost of higher inflation" is an example of a purely normative statement.

False. It is possible to test this proposition empirically, making it a positive statement.

A1-3. If the US can produce either 4 smartphones **or** 2 game consoles with a unit of resources and Canada can produce either 3 smartphones **or** 1 game console with a unit of resources, then the US has an absolute advantage over Canada in the production of both goods, and Canada has no comparative advantage.

False. US has an absolute advantage in both goods, but Canada has a comparative advantage in the production of smartphones.

A1-4. If, at the existing price, the quantity supplied exceeds the quantity demanded, the supply curve will shift to the left to eliminate the difference.

False. Price must be lowered, move along both curves as the quantity demanded increases and the quantity supplied is decreased. Neither curve shifts.

A1-5. An increase in the number of people unemployed necessarily causes an increase in the unemployment rate.

False. This is only true if the labour force stays constant. If the increase in number of people unemployed is matched or exceed by the number of people leaving the labour force at the same time, the unemployment rate (# unemployed/labour force) would stay constant or decrease.

A1-6. Suppose the US dollar exchange rate with the Euro is 1.3200 $US/Euro and the Canadian dollar exchange rate with the Euro is 1.3860 $C/Euro. If exchange rates are consistent across currencies, the Canadian dollar exchange rate with the US dollar is 1.05 $C/$US.

True. $C/$US = (1.386$C/Euro)*(Euro/1.32$US) = (1.386$C/1.32$US) = 1.05$C/$US

A1-7. Suppose a Canadian company exports half of its $10 M worth of its output to the US and sells the rest to domestic consumers. It imports $1 M worth of raw material from the US, pays its workers $6 M in wages, pays its creditors $2 M in interest, and retains $1 M in profits for its owners. This company's operations add $9 M to Canadian GDP whether measured by the value added approach, the expenditure approach, or the income approach.

True.

***Value Added = Revenues – Cost of Intermediate Goods (imported from the US)* = 10 – 1 = 9**

***Expenditure Approach = Consumption + Exports – Imports* = 5 + 5 – 1 = 9**

***Income Approach = Wages + Interest + Profits* = 6 + 2 + 1 = 9**

A1-8. If desired aggregate expenditure is less than actual output, aggregate expenditure will rise until it equals actual output.

False. When actual output is greater than desired AE inventories are being accumulated. Firms will reduce the level of output because of this inventory accumulation. Reduction in output reduces income, this induces a decrease in desired aggregate expenditure. We will move down and to the left along the AE curve, as long as the AE curve is below the 45 degree line. At the intersection of the AE curve and 45 degree line firms will stop reducing output. At this point actual output is exactly equal to the level of desired aggregate expenditure, and the economy is in equilibrium.

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

A1-9. During 2008 and 2009, housing prices in many Canadian cities were very volatile – decreasing quite quickly, and then increasing again. Use a diagram to examine the market for housing by answering the questions below.

(a) Housing prices in the US decreased dramatically before there were any significant changes in Canada. This US event may have caused Canadians to expect a similar outcome here. Assuming that the housing market operates according to the principles of supply and demand, explain how this change in expectations might have lead to an actual decrease in housing prices in Canada. [4]

Suppose the equilibrium price is P0 in diagram above, at the intersection of S and D. If potential buyers expect prices to be lower in the future, some would wait to purchase later, so demand shifts left from D to D'. If potential sellers expect lower prices in the future, more will want to sell today, shifting supply to the right from S to S'. So the equilibrium moves from point A to point B with a lower price at P1.

(b) Explain why each of the following events would lead to a subsequent increase in the price of housing. (i) A decrease in mortgage interest rates leaves more buyers willing to purchase at any given price. (ii) A reduction in new home construction during the worst of the financial crisis that leads to fewer homes being offered for sale in subsequent months. [4]

(i) If the equilibrium is initially at point B at the intersection of S' and D', then the reduction in mortgage interest rates would cause demand to shift to the right to D. The new equilibrium would be at point E with the higher price P2.

(ii) If the equilibrium is initially at point B, then the decrease in housing supply would shift the supply curve from S' to S. The new equilibrium would be at point C with the higher price P2.

(c) Suppose you did not know which of the events from part (b) had taken place (but that one of them did). Is there some market information (in addition to the increase in price) that would allow you to infer which had actually occurred? [4]

If one could determine the direction of the change in quantity, it would become clear which event had taken place. If, in addition to the price increase, the quantity traded rose, then you would know that the new equilibrium is a point like E. Therefore event (i) must have taken place. If the quantity traded fell, then the new equilibrium is a point like C, and event (ii) must have taken place.

A1-10. Consider the following data about an economy in 2011 and 2012:

	2011		2012	
	Price	***Quantity***	***Price***	***Quantity***
Lentils	$2.00	200	$2.50	180
Rice	$1.00	400	$1.10	500

(a) Assuming that the data represents consumption spending, calculate the consumer price index (CPI) for each year assuming the base year is 2011. What is the inflation rate in the CPI? [6]

Total cost in 2011 = ($2*200)+($1*400) = $800

Total cost 2011 goods, in 2012 prices = ($2.50*200)+($1.10*400) = $940

CPI2011 = ($800/800)*100 = 100

CPI2012 = ($940/$800)*100 = 117.5

Inflation =((117.5-100)/100)*100 = 17.5%

(b) Assume now that the data represents all the goods and services produced by this economy. Calculate nominal GDP for each year. Calculate real GDP for each year assuming that 2011 is the base year. [6]

2011 nominal GDP = ($2*200)+($1*400) = $800

2012 nominal GDP = ($2.50*180)+($1.10*500) = $1000

2011 Real GDP = ($2*200)+($1*400) = $800

2012 Real GDP = ($2*180)+($1*500) = $860

(c) Calculate the GDP deflator for each year assuming that 2011 is the base year. What is the inflation rate in the GDP deflator? [6]

GDP Deflator = (Nominal GDP/Real GDP)*100

2011 GDP Deflator = ($800/$800)*100 = 100

2012 GDP Deflator = ($1000/$860)*100 = 116.28

Inflation =((116.28 – 100)/100)*100 = 16.28%

A1-11. Consider the following simple aggregate expenditure model of an economy operating with fixed wages, prices, interest and exchange rates:

$$C = 200 + 0.75Y_d \qquad I = 200$$

where C is consumption, the 0.75 term represents the marginal propensity to consume, Y_d is disposable income (equal to national income, Y, in the absence of a government sector), and I is investment spending.

(α) Solve for aggregate expenditures (AE) as a function of Y, and calculate the equilibrium level of national income. Illustrate your equilibrium in a diagram with AE on the vertical and Y on the horizontal axis. [5]

AE = C+I = 400 + 0.75Y

Equilibrium National Income occurs when Y = AE

Y = AE = 400 + 0.75Y

Y(1-0.75) = 400

Y = 400/(0.25)

Y = 1600

(β) What is the value of the multiplier in this model? [2]

Multiplier = 1/(1-z); z = slope of AE line

Z = 0.75

Multiplier = 1/(1-0.75) = 4

(χ) Calculate the equilibrium levels of consumption and saving. [5]

C = 200 + 0.75(1600) = 1400

S = I = Y - C = 200

(δ) Suppose now that investment spending increases to 250. Calculate the new equilibrium level of national income. Illustrate in your diagram. [5]

I = 250

AE = 450 + 0.75Y

Equilibrium: Y = AE = 450+0.75Y

Y(1-0.75) = 450

Y = 450/0.25

Y = 1800

(ε) Calculate the new equilibrium levels of consumption and saving. [5]

C = 200 +0.75*1800 = 1550

I = S = Y – C = 250