Instructions: Answer question 1 and any additional three questions. Begin each numbered question on a fresh page. Number the questions you are answering on the cover page. To get full credit you must show all steps in your work. <u>Unsupported answers will receive no credit!</u>
You must work independently. **Due: Monday 4/25/2022**

The following needs to be signed and included with your cover page:
I pledge my honor that I have abided by the Stevens Honor System and Graduate Student Code of Academic Integrity
Signature: _____Yufu Liao 廖钰夫_____

1. Use AD and AS curves to explain the effects on the equilibrium price level and equilibrium level of output in the short run.

(a) A contractionary fiscal policy with the economy operating near full capacity.

(b) An expansionary monetary policy during a period of high unemployment and excess industrial capacity.

(c) A strong hurricane destroys energy plants which cause energy prices to increase, assuming that the Fed attempts to keep interest rates constant by accommodating inflation.

(d) The federal government pursues a contractionary fiscal policy while the Fed acts to keep output from falling.

2. The following data represent the economy of Yahooland:

$C=1000+0.5Y_d$, $T=200$, $G=400$, $I=500$

(a) Calculate the equilibrium level of output. Graph your solution.

(b) If the government spending increases by 400 what is the new equilibrium level of output? Use the government spending multiplier.

(c) If the government increases taxes by 400 what is the new equilibrium level of output? Use the tax multiplier.

(d) If the government increases taxes and spending by 400 what is the new equilibrium level of output?

(e) Calculate the equilibrium level of output in case where taxes depend on income according to the following: $T= -100+0.1Y$.

3. (a) Suppose that the economy of Microland is expanding rabidly. Due to this rapid expansion, the Federal Reserve Bank is pursuing a contractionary monetary policy. Draw clearly labeled graphs for each market (Money market, Goods Market and Investment) to show the effects of this policy on the equilibrium interest rate, investment and output.

(b) Suppose that the economy of Macroland is expanding rabidly. Due to this rapid expansion, the Federal Government is pursuing a contractionary fiscal policy. Draw clearly labeled graphs for each market (Money market, Goods Market and Investment) to show the effects of this policy on the equilibrium interest rate, investment and output. Is there any crowding-out due to the contractionary fiscal policy?

4. Wilson has been producing tennis racquets since 1948 and continues to implement strategies that make it a leader in the tennis racquet industry. Suppose that when Wilson and its largest rival, Head, advertise, each company earns $0 billion in profits. When neither company advertises, each company earns profits of $8 billion. If one company advertises and the other does not, the company that advertises earns $48 billion and the company that does not advertise loses $1 billion. Under what conditions could collusion be profitable? Explain.

5. Suppose two firms are engaging into the following one-shot game: if firm 2 advertises and firm 1 does not, firm 2 will make $20 million in profits and firm 1 will make $6 million. If firm 1 advertises and firm 2 does not, firm 2 will make $2 million and firm 1 will make $6 million. If firm 2 advertises and firm 1 advertises, each firm earns $10 million. If neither firm advertises, firm 1 will make $8 million and firm 2 will make $4 million.

(a) Write the payoff matrix for the above game.

(b) Does firm 1 have a dominant strategy?

(c) Does firm 2 have a dominant strategy?

(d) What is the Nash equilibrium for the one-shot game?

Explain your answers.