

Test #2

Points for each problem are shown out of 100 points. Each subsection in a problem is weighted equally.

Please show the calculations used to arrive at your answers. Draw graphs neatly and label clearly. Round answers to the second decimal place if necessary.

A. (20 pts) Answer True, False, or Uncertain, and briefly explain your answer.

- (1) The monopolistic competition model is characterized by a small number of firms facing a large number of consumers, and barriers to entry.
- (2) For $C = C_0 + C_1Y$, if $C_0 > 0$ and $C_1 > .5$, then the marginal propensity to save is less than the average propensity to consume.
- (3) If a union succeeds in controlling a particular labor market, wages in the market will fall and employment in the market will rise.
- (4) An increase in immigration into the US will increase US GDP.

B. (20 pts) Shortish answers.

- (1) A gigantic tornado levels Chicago and kills all of its inhabitants. How would you expect this to affect aggregate demand (AD), both in the immediate aftermath and by 1 year later?
- (2) If the economy is currently in long-run equilibrium, explain and show, using graphs, what will happen if a new low-cost technology is invented that makes all uses of energy twice as efficient (e.g., cars that currently get 20 mpg now get 40 mpg).

C. (20 pts) Dillon Enterprises is the monopolist of the market for bajajets.

Dillon has costs $C(Q) = .05Q^2 + 100$.

The demand for bajajets is $Q = 1200 - 20P$.

- (1) What are market price and quantity?
- (2) How much deadweight loss is generated in this market?
- (3) The government levies a tax of \$10 per bajajet. Now what are market price and quantity?
- (4) What are Dillon's profits before and after the tax?

D. (10 pts) Compare two potential financial investments:

A costs \$1000 today and pays \$100 per year (starting a year from today) forever.

B costs \$450 today and pays \$275 per year (starting a year from today) for 2 years.

(1) The interest rate is 10 percent. Which investment do you prefer, and why?

(2) The price for buying A drops to \$800. Now what is the yield on A?

E. (15 pts) Assume that the U.S. banking system's balance sheet looks like this and that banks are operating at the required reserve ratio (so no excess reserves):

Assets		Liabilities	
Reserves	\$20,000	Deposits	\$100,000
Loans	\$100,000	Capital	\$20,000
	\$120,000		\$120,000

(1) If the Federal Reserve wants money supply to rise by \$20,000, what open market operation should it carry out?

(2) Alternatively, if the Federal Reserve wants to make this change through altering the reserve ratio, what reserve ratio should it set?

(3) In either case, what will happen to national income (Y) if money demand is perfectly elastic?

F. (15 pts) Consider an economy characterized by the following equations:

$$AD = C + I + G; Y = AD; C = C_0 + C_1Y; I = I_0 + I_1Y$$

(1) If $C_0 = 100$, $C_1 = .8$, $I_0 = 100$, $I_1 = .1$, and $G = 100$, what do Y, C, and I equal?

(2) Give the formula for the multiplier. What is the value of the multiplier?

Now add the money market as follows:

$$M_D = M_0 - M_1r + M_2Y; M_S = \bar{M}; M_D = M_S$$

(3) If $M_0 = 300$, $M_1 = 20$, $M_2 = .1$, and $\bar{M} = 500$, now what do Y and r equal?