

Name: _____ Date: _____

1. Assume that the long-run aggregate supply curve is vertical at $Y = 3,000$ while the short-run aggregate supply curve is horizontal at $P = 1.0$. The aggregate demand curve is $Y = 2(M/P)$ and $M = 1,500$.
 - a. If the economy is initially in long-run equilibrium, what are the values of P and Y ?
 - b. If M increases to 2,000, what are the new short-run values of P and Y ?
 - c. Once the economy adjusts to long-run equilibrium at $M = 2,000$, what are P and Y ?

2. Assume that the long-run aggregate supply curve is vertical at $Y = 3,000$ while the short-run aggregate supply curve is horizontal at $P = 1.0$. The aggregate demand curve is $Y = 3(M/P)$ and $M = 1,000$.
 - a. If the economy is initially in long-run equilibrium, what are the values of P and Y ?
 - b. Now suppose a supply shock moves the short-run aggregate supply curve to $P = 1.5$. What are the new short-run P and Y ?
 - c. If the aggregate demand curve and long-run aggregate supply curve are unchanged, what are the long-run equilibrium P and Y after the supply shock?
 - d. Suppose that after the supply shock the Fed wanted to hold output at its long-run level. What level of M would be required? If this level of M were maintained, what would be long-run equilibrium P and Y ?

3. How does recession occur? What is a business cycle?

4. What is the relationship between unemployment and real GDP? Explain Okun's law.

5. The $IS-LM$ model simultaneously determines equilibrium in two markets.
 - a. Which two markets?
 - b. What two variables adjust to bring equilibrium in the markets?

6. What is the difference between the short run and the long run?

7. Assume that planned expenditure consists of consumption, investment, and government expenditures only. Further, assume that consumption $C = c(Y - tY)$, where tY denotes taxes as a function of income. Calculate the equilibrium level of Y and the government expenditure multiplier.
8. Assume that an economy is characterized by the following equations:
 $C = 100 + (2/3)(Y - T)$
 $T = 600$
 $G = 500$
 $I = 800 - (50/3)r$
 $M^s/P = M^d/P = 0.5Y - 50r$
- Write the numerical IS curve for the economy, expressing Y as a numerical function of G , T , and r .
 - Write the numerical LM curve for this economy, expressing r as a function of Y and M/P .
 - Solve for the equilibrium values of Y and r , assuming $P = 1.0$ and $M = 1,200$. How do they change when $P = 2.0$? Check by computing C , I , and G .
 - Write the numerical aggregate demand curve for this economy, expressing Y as a function of G , T , and M/P .
9. Assume the following model of the economy, with the price level fixed at 1.0:
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| $C = 0.8(Y - T)$ | $T = 1,000$ |
| $I = 800 - 20r$ | $G = 1,000$ |
| $Y = C + I + G$ | $M^s/P = M^d/P = 0.4Y - 40r$ |
| $M^s = 1,200$ | |
- Write a numerical formula for the IS curve, showing Y as a function of r alone. (*Hint*: Substitute out C , I , G , and T .)
 - Write a numerical formula for the LM curve, showing Y as a function of r alone. (*Hint*: Substitute out M/P .)
 - What are the short-run equilibrium values of Y , r , $Y - T$, C , I , private saving, public saving, and national saving? Check by ensuring that $C + I + G = Y$ and national saving equals I .
 - Assume that G increases by 200. By how much will Y increase in short-run equilibrium? What is the government-purchases multiplier (the change in Y divided by the change in G)?
 - Assume that G is back at its original level of 1,000, but M (the money supply) increases by 200. By how much will Y increase in short-run equilibrium? What is the multiplier for money supply (the change in Y divided by the change in M)?

10. In an economy, if 5 percent of the employed lose their job every month ($s = 0.05$) while 15 percent of the unemployed find a job every month ($f = 0.15$), what is the steady rate of unemployment of the economy?
11. If the rate of job separation is 0.02 per month and the rate of job finding is 0.10 per month, what is the natural rate of unemployment?
12. If the economy were at a steady-state unemployment rate with a separation rate of 0.02 per month and a job-finding rate of 0.10 per month, and the labor force was 100 million, how many individuals would lose their jobs each month?
13. Consider a closed economy to which the Keynesian-cross analysis applies. Consumption is given by the equation $C = 200 + 2/3(Y - T)$. Planned investment is 300, as are government spending and taxes.
- If Y is 1,500, what is planned spending? What is inventory accumulation or decumulation? Should equilibrium Y be higher or lower than 1,500?
 - What is equilibrium Y ? (*Hint*: Substitute the values of equations for planned consumption, investment, and government spending into the equation $Y = C + I + G$ and then solve for Y .)
 - What are equilibrium consumption, private saving, public saving, and national saving?
 - How much does equilibrium income decrease when G is reduced to 200? What is the multiplier for government spending?
14. Assume that the consumption function is given by $C = 200 + 0.5(Y - T)$ and the investment function is $I = 1,000 - 200r$, where r is measured in percent, G equals 300, and T equals 200.
- What is the numerical formula for the IS curve? (*Hint*: Substitute for C , I , and G in the equation $Y = C + I + G$ and then write an equation for Y as a function of r or r as a function of Y .) Express the equation two ways.
 - What is the slope of the IS curve? (*Hint*: The slope of the IS curve is the coefficient of Y when the IS curve is written expressing r as a function of Y .)
 - If r is one percent, what is I ? What is Y ? If r is 3 percent, what is I ? What is Y ? If r is 5 percent, what is I ? What is Y ?
 - If G increases, does the IS curve shift upward and to the right or downward and to the left?