1. What are the three functions of money? Evaluate whether "gold" can effectively serve these three functions.

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- Medium of exchange.
  - In some countries, for ex. Dubai accept gold when buying goods.
- Store of value.
  - Some people are buying gold when the gold are cheap and kept to sell when their price is rising up.
- unit of account.
  - For example, 1 ฿ of gold = 25,000 ฿ of cash
    An Iphone X = 25,000 ฿ = 1 ฿ of gold.

2. Suppose that people hold 1000$ as cash, 1000$ as demand deposits, and 1000$ as savings; calculate narrow money and broad money. How much is the "money supply" in the economy?

narrow = M1
broad = M2

M2 = M_1 + saving and time deposits
[currency circulation + demand deposits + saving & time deposits].

Narrow money = M_1 = cash + deposit = 2000 ฿
Broad Money = M_2 = M_1 + saving = 3000 ฿

* Suppose R.R. = 10%. * (Money supply).

Deposit 2000 ฿ → loan = 1800 ฿
reserve = 200 ฿

$= 2000(1 + 0.9^1 + \ldots + 0.9^n)$
$= 2000 \times \frac{1}{1-0.9} = 20,000$

3. What is Fractional Reserve System (FRS)? Explain how money can be created through this system.

- Fractional reserve banking is a system in which only a fraction of bank deposits are backed by an actual cash on hand and available for withdraws.
  - The bank can lend out some money to people which is the money are from customer's deposit.

4. Suppose that the reserve ratio is 20% and that Mr.Bean has 100$ CASH and 200$ DEPOSIT. Assume that people deposits all their money, and that the banks lend all their deposits; answer the following questions.
a) What does the reserve ratio of 20% means?
b) WITHOUT the fractional reserve system (FRS), how much is the money supply?
c) Calculate the money multiplier.
d) WITH the FRS, how much is the TOTAL DEPOSIT within the economy?
e) How much deposit is created from the FRS?
f) WITH the FRS, how much is the money supply?

a). They need to reserve 20 %. out of cash + deposit to Central Bank.

b). Initial deposit = 300 $

c). money multiplier = $\frac{1}{R.R.} = \frac{1}{0.2} = 5$

d). Total deposit = $300(1 + 0.8 + 0.8^2 + \dots 0.8^n)$

$= 300 \times \frac{1}{0.2} = 1{,}500$ $

e). 1,200 $ (5 initial deposit of 1 $ can generate upto total deposit of 5 $).

f). 1,500 $

5. Explain three roles of central banks.

- Monetary policy - control the money supply (control Interest rate).
- Lender of last resort - Provide financial services (Commercial Bank borrows money from Central Bank).
- Bank regulation - Managing exchange rates and the nation's foreign exchang services.

6. What is Liquidity? What is the most liquid asset? Explain the three reasons (according to Keynes) why people prefer to have liquidity. Which of these three reasons causes the money demand curve to be downward-sloping?

Cash. Liquidity - how easily assets can be converted into mean of exchange.

- Transaction Demand (for daily use).
- Precautionary Demand (for unexpected use).

} Does not depend on Interest rate.

- Speculative Demand (for future investment).
  ↳ When Interest rates are low, people will hold more cash.
  - ready to be use, less risk than bonds.

7. How does each of the followings affect the money demand curve? (That is, will it shift the curve, or is it movement along the curve?) Also, explain your reasoning.
   a) People become poorer.
   b) Goods become more expensive.
   c) People prefer to hold less cash due to debit/credit cards
   d) The central bank decreases interest rate.

a) the curve will move to the left.
Due to less income ppl are poorer, they will be spend less money.

b) the curve will move to the right.
Due to the higher the price level, the greater the demand curve.

c) the curve will move to the right.
Due to lower cash → more bonds → high interest rate → curve move to right.

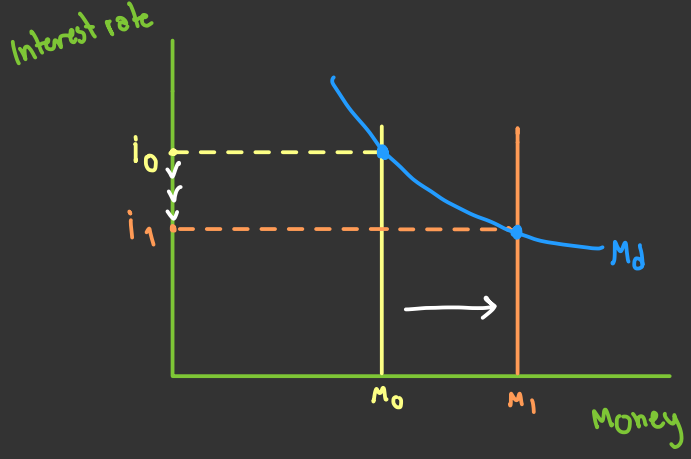
d) the curve will move to the left
less interest rate, people will want to hold more cash → demand move to the left.

8. Why is the money supply curve a vertical line? How does each of the followings affect the money supply curve? Also, explain your reasoning.
   a) People deposit more money.
   b) The central bank increases reserve ratio.
   c) The central bank decreases discount rate.
   d) The central bank decreases interest rate.

- Bc money supply does not depend on interest rate but set by Central Bank so it's always vertical

a) The money supply increase, due to deposit to a bank → bank's total reserves increases → loan out → ↑ MS ↑
b) when CB raise RR → more deposit being kept as reserve → less currency in the economy → lower MS ↓
c) When CB ↓ discount rate → increases excess reserves in commercial banks → expand money supply. ↑
d) When CB ↓ interest rate → boost the economy → more MS ↑

9. Suppose that the central bank wants to lower interest rate to boost the economy. Explain, together with the money market diagram, how the central bank can achieve this through an open market operation.



- lower interest rate will create more money supply
- Everyone prefers to hold cash rather than a bond.

10. Suppose that the money market is NOT in equilibrium because the current interest rate is higher than the equilibrium rate, $i > i^*$. Explain how the money market adjusts to reach the equilibrium.

$i > i^*$ (i too high) Surplus - force I down

→ excess suply of money → ppl convert cash into interest-bearing assets or buy bond.

→ Too much money offered to bond issuers, who can't give high interest rate to many savers.

→ bond issuers need to reduce i → i fall i^*

11. Write down the equation for the Quantity Theory of Money. Explain how this equation can be used to explain inflation.

$MV = PY$

→ MS ↑ → P ↑ in the long run.

→ An increase in money supply leads to an increase in price levels.

→ The increase in price levels will eventually result in a rising Inflation level.

12. Let the money demand function be $M_D = 200 - (1000)i$ and the money supply function be $M_S = 100$.

a) Calculate the equilibrium interest rate, i*. (Hint: set $M_D = M_S$ and solve for i*)

b) Suppose that new money demand function becomes $M_D = 400 - (1000)i$. What can be inferred about the transaction and precautionary demand?

a) $M_D = M_S$

$200 - (1000)i = 100$

$200 - 1000i = 100$

$-1000i = -100$

$i^* = 0.1$

b) They will remain the same because they are not depend on interest rate.