

### QUESTION 1

Excess reserves act as insurance against deposit outflows. Suppose that on a yearly basis Malcom Bank holds \$12 million in excess reserves and \$88 million in required reserves. Suppose that Malcom Bank can earn 3.5% on its loans and that the interest paid on (total) reserves is 0.2%. What would be the cost of this insurance policy?

### QUESTION 2

The bank you own has the following balance sheet. If the bank suffers a deposit outflow of \$50 million with a required reserve ratio on deposits of 10%, what actions should you take?

Assets	Liabilities+Capital
Reserves: \$75	Deposits: \$500
Securities: \$0	Borrowings: \$0
Loans: \$525	Capital: \$100

### QUESTION 3

Duck Bank is a commercial bank in Oregon. Below is its initial balance sheet (unit: million USD).

Assets	Liabilities+Capital
Reserves: \$124	Deposits: \$300
Securities: \$176	Borrowings: \$200
Loans: \$300	Capital: \$100

(1) Given the required reserve ratio is 20%, calculating the required reserves amount.

(2) What is the largest deposit outflow that Duck Bank can sustain without making changes to other components in its balance sheet?

- (3) Fill in the new balance sheet after a customer withdraws \$100 million.

Assets	Liabilities+Capital
Reserves:	Deposits:
Securities:	Borrowings:
Loans:	Capital:

- (4) You will see that the bank fails to meet the reserve requirement because of this deposit outflow. How much more reserves that this bank needs to meet the requirement?

- (5) Duck bank chooses to **selling securities** to make up for this shortfall in reserves. Complete the final balance sheet after this securities sale is completed.

Assets	Liabilities+Capital
Reserves:	Deposits:
Securities:	Borrowings:
Loans:	Capital:

- (6) What is cost of this option? Note that this cost is not reflected in the balance sheet.

- (7) Give one more option to make up for this shortfall in reserves.