1 Accounting

Chapter Objectives

Obtaining basic accounting knowledge essential for the understanding of business activities.

① Understanding the flow of accounting information in a business enterprise.
② Understanding the steps of preparing a balance sheet and an income statement and the method of settling accounts in a business enterprise.
③ Learning how to read the balance sheet and the income statement, and understanding the differences between financial accounting and management accounting.

1.1 Business Activities and Accounting Information

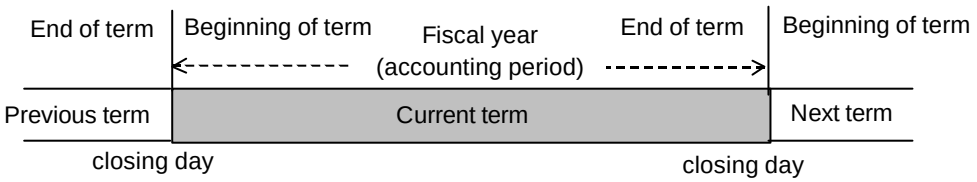
1.1.1 Fiscal Year and Accounting Information

A business processes its accounts on a fiscal year (accounting period) basis. A business summarizes the results of its activities during a fiscal year in statements of accounts (financial statements).
Statements of accounts show the business's operating performance during a fiscal year and its financial conditions. The main statements of accounts are a balance sheet and an income (profit and loss) statement, both prepared at the closing of the fiscal year.

(1) Fiscal Year

A business conducts activities on a continuous basis, and it is necessary to set a specific cycle of time for accounting purposes. This cycle is called a fiscal year (accounting period). A fiscal year is usually a 12-month period. The fiscal year of many Japanese companies runs from April 1 through March 31 of the next year.
The beginning of a fiscal year is called the beginning of a term, and the end of a fiscal year the end of a term. The end of a term is also called a closing day.

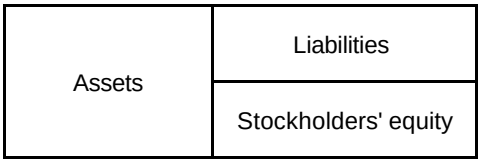
Figure 1-1-1 Fiscal Year and Closing Day



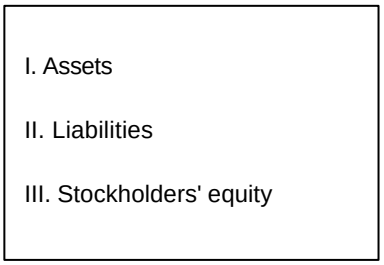
(2) Balance Sheet (B/S)

The balance sheet shows the business's financial position at a specific point in time, usually at the end of a term. It consists of assets, liabilities, and stockholders' equity. It shows assets on the left (debit) and liabilities and stockholders' equity on the right (credit).
In addition to this traditional format called the ledger account (T-account), there is a report form, which presents assets above and liabilities and stockholders' equity below.

Balance Sheet in Ledger Account



Balance Sheet in Report Form



① Assets

Assets include the cash, deposits with banks, buildings, furniture, machinery, and other goods of value held by an enterprise for business activities and the rights to receive cash from others in the future, such as receivable and loans.

② Liabilities

Liabilities are an enterprise's obligations to make payments in the future. Also called "borrowed capital," liabilities reduce assets.

③ Stockholders' equity

Stockholders' equity is the net assets remaining after subtracting an enterprise's total liabilities from its total assets. As opposed to borrowed capital, stockholders' equity is also called "owner's equity."
The following equation expressing stockholders' equity is called a "capital equation":

Assets - Liabilities = Stockholders' Equity

The balance sheet shows the conditions of the enterprise's assets, liabilities, and stockholders' equity at a specific point in time. Transposing liabilities to the right side of the capital equation gives the following equation:

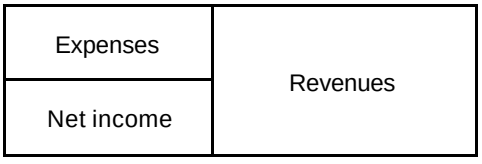
Assets = Liabilities + Stockholders' Equity

This equation is called a "balance sheet equation." This means that on the balance sheet, the total amount of assets on the left always equals (that is, balances with) the total amount of liabilities and stockholders' equity on the right. Hence the name "balance sheet."
As an enterprise conducts business, its assets, liabilities, and stockholders' equity change from their levels at the beginning of a term. When stockholders' equity at the end of a term exceeds stockholders' equity at the beginning of the term, the difference is called a "net income" (net profit for the term). In the opposite case, the difference is called a "loss" (net loss for the term).

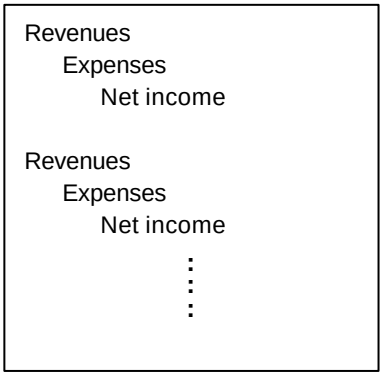
(3) Income Statement (Profit and Loss Statement; P/L)

The income statement consists of revenues and expenses. It presents the business's operating performance during a specific period (usually a fiscal year). It shows expenses on the left (debit) and revenues on the right (credit). If the total revenues exceed that of expenses, the difference is a profit. In the opposite case, the difference is a loss. A profit is recorded on the left (debit), and a loss on the right (credit).
Like the balance sheet, the income statement is also prepared in the account form or the report form. In the case of the income statement, the report form is more common.
For example, when companies publish their operating and financial results in newspapers, the balance sheets usually take the ledger account (T-account), and the income statements the report form.

Income Statement in Ledger Account



Income Statement in Report Form



① Revenues

Revenues are increases in stockholders' equity produced by an enterprise's business activities. Revenues include sales of products, commissions received, and rents received.

② Expenses

Expenses are decreases in stockholders' equity produced by an enterprise's business activities. Expenses are expenditures of the enterprise. Expenses include employee salaries, commissions paid, and advertising expenses.

③ Net income (net loss)

The difference between the total amount of revenues and that of expenses is a net income (net loss). This relationship is represented by the following equation:

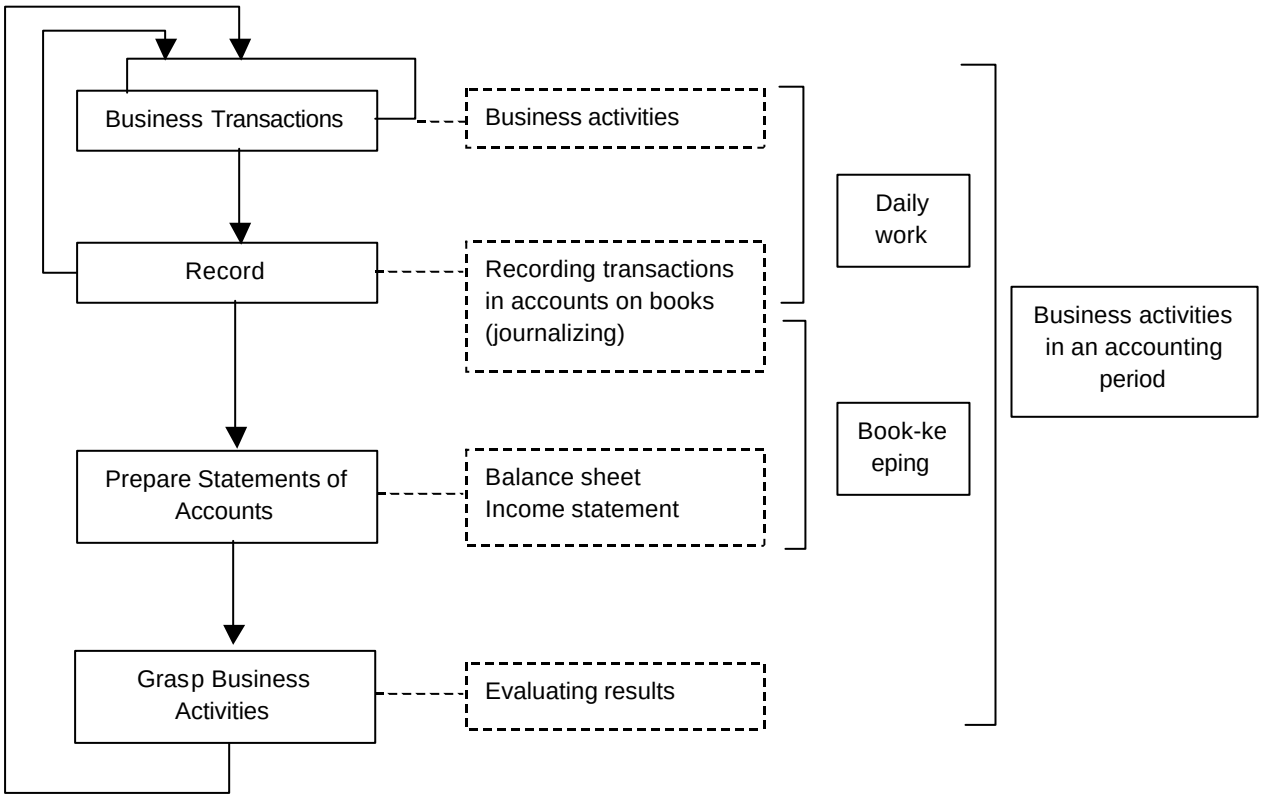
Expenses + Net income = Revenues

This equation is called an "income statement equation." The net income agrees with the balance remaining after subtracting the stockholders' equity at the end of a fiscal year from the stockholders' equity at the beginning of the term shown on the balance sheet.

(4) Flow of Transaction Information

In order to grasp the conduct of business activities, it is vital to understand the process of preparing statements of accounts based on transaction information (slips) and to correctly read the statements of accounts presenting the results of business activities.
The flow of transaction information is shown in Figure 1-1-2.

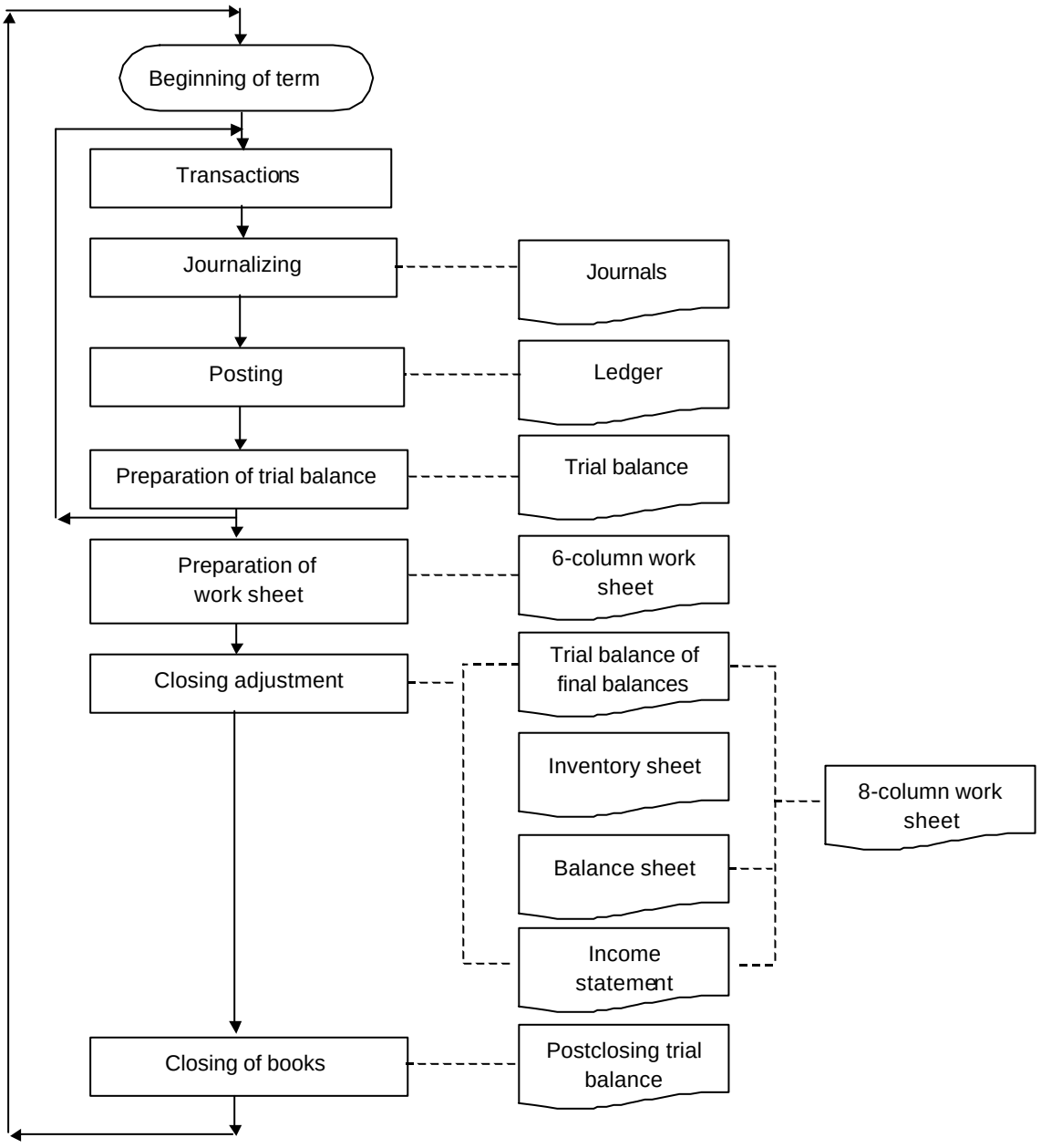
Figure 1-1-2 Flow of Transaction Information



1.1.2 The Accounting Structure

For the preparation of statements of accounts, all transactions arising from business activities are processed according to rules. These rules are called "(double-entry) bookkeeping." The accounting procedure under these rules is shown in Figure 1-1-3.

Figure 1-1-3 From Transactions to Closing of Books



(Source: "Class II Common Curriculums" edited by Central Academy of Information Technology, Japan Information Processing Development Corporation)

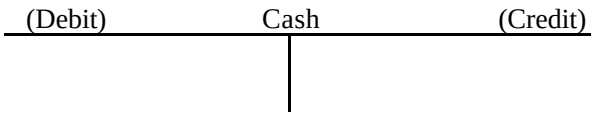
(1) Transactions

In bookkeeping, a transaction means an event that causes an increase or decrease in assets, liabilities, or stockholders' equity. The occurrence of revenue or an expense is also a transaction in bookkeeping, since it causes an increase or decrease in stockholders' equity.

(2) Journalizing

In bookkeeping, transactions as they are conducted are recorded, classified into detailed categories, and calculated to determine what increases or decreases they brought to assets, liabilities, and stockholders' equity and what revenues or expenses they brought about. The bookkeeping categories set for such recording and calculations are called "accounts," and their names are called "titles of account." Account columns are the columns set aside in a journal for the recording and calculation of increases and decreases in individual titles of account. Account columns are provided on the left-hand side (debit) and the right-hand side (credit) of ledger pages.

Example of an account in ledger account (T-account)



Each transaction is decomposed into debit and credit elements. Based on the results, it is determined:

- what amount should be entered on the debit side of which account and
- what amount should be entered on the credit side of which account.

This procedure is called "journalizing."

The results of journalizing are entered in the journal in chronological order of transactions. In recent years, it is also very common to use slips instead of a journal.

How to Make Entries

Here are the rules for recording in accounts the increases and decreases in assets, liabilities, and stockholders' equity or amounts of revenues and expenses arising from transactions:

① Enter an increase in assets on the debit side and a decrease in assets on the credit side.
② Enter an increase in liabilities or stockholders' equity on the credit side and a decrease on the debit side.
③ Enter revenue on the credit side as it accrues.
④ Enter an expense on the debit side as it accrues.

	Debit (left-hand side)	Credit (right-hand side)
① Assets	Increase (+)	Decrease (-)
② Liabilities	Decrease (-)	Increase (+)
Stockholders' equity	Decrease (-)	Increase (+)
③ Revenues	Decrease (-)	Accrual (+)
④ Expenses	Accrual (+)	Decrease (-)

(3) Posting

Posting means the transfer of records from the journal to account columns provided in a ledger (general ledger).

(4) Preparation of Trial Balances

There are three types of trial balances: the trial balance of totals, the trial balance of balances, and the trial balance of totals and balances. The main objective of preparing trial balances is to check whether posting from the journal to the ledger has been performed correctly.

① Trial balance of totals

A trial balance of totals is prepared by calculating the debit total and the credit total for each title of account on the ledger. An example is shown below.

(Thousands of yen)

Debit	Title of Account	Credit
2,430	Cash	1,400
170	Accounts receivable	50
865	Merchandise	650
75	Furniture	
300	Buildings	
	Accounts payable	120
100	Loans payable	500
	Stockholders' equity	1,000
	Sales revenue	350
20	Wages payable	
110	Advertising expense	
4,070		4,070

② Trial balance of balances

The trial balance of balances is prepared by calculating the balances (differences) of the accounts on the trial balance of totals. Here is the trial balance of balances prepared based on the trial balance of totals shown in ①:

(Thousands of yen)

Debit	Title of Account	Credit
1,030	Cash	
120	Accounts receivable	
215	Merchandise	
75	Furniture	
300	Buildings	
	Accounts payable	120
	Loans payable	400
	Stockholders' equity	1,000
	Sales revenue	350
20	Wages payable	
110	Advertising expense	
1,870		1,870

③ Trial balance of totals and balances

The trial balance of totals and balances is prepared by combining the trial balance of totals and the trial balance of balances into one. Here is the trial balance of totals and balances prepared by combining the trial balance of totals shown in ① and the trial balance of balances shown in ②:

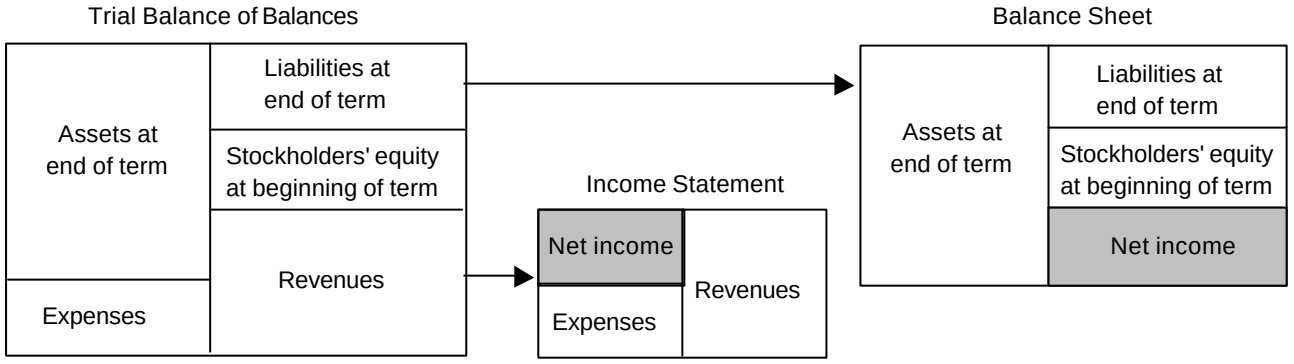
(Thousands of yen)

Debit		Title of Account	Credit	
Balance	Total		Total	Balance
1,030	2,430	Cash	1,400	
120	170	Accounts receivable	50	
215	865	Merchandise	650	
75	75	Furniture		
300	300	Buildings		
		Accounts payable	120	120
	100	Loans payable	500	400
		Stockholders' equity	1,000	1,000
		Sales revenue	350	350
20	20	Wages payable		
110	110	Advertising expense		
1,870	4,070		4,070	1,870

(5) Preparation of the Six-Column Work Sheet

A statement containing a trial balance of balances, an income statement, and a balance sheet is called a "six-column work sheet." This statement is helpful in understanding the general flow of the closing of the books. "Six columns" refers to the total number of the debit and credit columns on the trial balance of balances, the income statement, and the balance sheet. The six-column work sheet provides basic material for the preparation of an income statement and a balance sheet.

Title of Account	Trial Balance of Balances		Income Statement		Balance Sheet	
	Debit	Credit	Debit	Credit	Debit	Credit
Assets						
Liabilities						
Stockholders' equity						
Revenues						
Expenses						
Net income (Net loss)						



(6) Closing Adjustment

In bookkeeping, daily transactions are entered in the journal and these records are posted to the ledger in order to record and calculate increases and decreases in individual accounts. This work is performed on a daily basis. When a fiscal year ends, it is necessary to clarify the operating results during the period and the financial position at the end of the period. The closing of the books means the acts of closing the books at the end of a fiscal year, summarizing the records, and preparing a balance sheet and an income statement.

Closing adjustment means the acts of amending the records on the books at their closing so that the individual accounts can show correct actual balances or correct amounts of revenues and expenses. Adjustment required for this purpose is called "closing adjustment (closing adjustment entries)."

Closing adjustment includes such procedures as income account and capital account transfers, calculations of profits and losses from merchandise transactions, estimation of bad debts, and depreciation and amortization expense.

Items that require such closing adjustment are called "closing adjustment items." A sheet listing those items is called an "inventory sheet." Meanwhile, an extended trial balance prepared by adding columns for closing adjustment (closing adjustment columns) to a six-column work sheet is called an "eight-column work sheet."

Title of Account	Trial Balance of Balances		Adjustment Entries		Income Statement		Balance Sheet	
	Debit	Credit	Debit	Credit	Debit	Credit	Debit	Credit
Assets								
Liabilities								
Stockholders' equity								
Revenues								
Expenses								
Net income (Net loss)								

(7) Closing of Books

After the closing of accounts, it is necessary to check whether the amounts to be carried forward in individual accounts have been calculated and entered correctly. For this purpose, the amounts to be carried forward to the next term are collected to prepare an after-closing trial balance (postclosing trial balance).
The debit and credit totals on the after-closing trial balance are entered on the first line of the journal as "balance brought forward" with the first date of the next term.

1.2 How to Read Financial Statements

1.2.1 How to Read the Balance Sheet

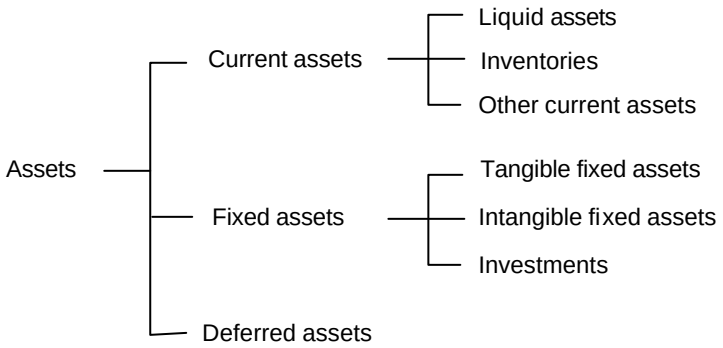
Figure 1-2-1 Example of the Balance Sheet (B/S)

Dated: (Thousands of yen)

Assets		Liabilities and Stockholders' Equity	
Title of Account	Amount	Title of Account	Amount
Current Assets	2,482	Current Liabilities	1,500
Cash and deposits	1,670	Accounts payable	1,200
Accounts receivable	600	Short-term loans	200
Securities	100	Advances received	100
Inventories	82	Fixed Liabilities	1,770
Others	30	Bonds	1,000
		Long-term debt	700
		Allowance for employee retirement and severance benefits	70
Fixed Assets	3,320		
Tangible fixed assets	1,840	Total Liabilities	3,270
Buildings	1,360		
Machinery and equipment	480	Capital stock	1,000
Intangible fixed assets	30	Legal reserves	650
Investments	1,450	Retained earnings	882
Shares in subsidiaries	890	(Of which, net profit or loss)	(340)
Investment securities	560	Total Stockholders' Equity	2,532
Total Assets	5,802	Total Liabilities and Stockholders' Equity	5,802

(1) Assets

According to the one-year rule and the normal operating cycle rule, assets are classified as follows:



- One-year rule

  Assets that are likely to be converted into cash within one year of a closing day are current assets. For example, a loan to be repaid within a year is a short-term loan and a current asset. A loan not to be repaid within one year is a long-term loan and a fixed asset.

- Normal operating cycle rule

When assets arise as part of a business's main activities (purchasing, production, and sales), they are classified as current assets even if they are not to be converted into cash within one year. The normal operating cycle rule applies to such titles of account as accounts receivable, notes receivable, and inventories.

For example, the price of an article sold under an installment contract is to be received in 36 monthly installments, these installments are not classified into current assets and fixed assets depending on whether they are receivable within one year or not; instead, the entire price is recorded as a current asset.

However, this rule does not apply to the uncollected amount for a fixed asset sold, since the sale is not a transaction made in the course of the main business activities. The amount should be recorded as a current asset or a fixed asset according to the one-year rule.

① Current assets

Current assets are assets likely to be converted into cash within one year according to the one-year rule or assets in the process of business activity according to the normal operating cycle rule. Depending on the characters of titles of account, current assets are divided into three categories: liquid assets, inventories, and other current assets.

a. Liquid assets

Liquid assets are cash and other assets that can be converted into cash in a short time. Liquid assets include checking and other deposits (excluding time deposits not maturing within one year), notes receivable, and securities being held temporarily.

Accounts receivable and notes receivable arising from business activity are called trade receivable.

Typical titles of account

Cash:	Legal tender, including banknotes and coins, checks received, stock dividends, and the like.
Accounts receivable:	Claims arising from the sale of products or services that have not been paid for yet.
Notes receivable:	Notes received in the course of ordinary transactions whose face amounts are to be received at promised dates.
Checking account:	A deposit account opened for conducting transactions using checks instead of cash.
Securities:	Shares, bonds, debentures, and the like purchased with the intention of holding them temporarily.

b. Inventories

Inventories include articles for sale, products manufactured for sale, and raw materials for manufacturing products. Since inventories require production and sales activities before they can be converted into cash, they are less readily convertible into cash.

Physical inventory means the act of counting the items of merchandise and product stock in the warehouse.

Typical titles of account

Merchandise:	Goods purchased from outside for resale.
Products:	Goods for sale manufactured or processed internally or externally from raw materials purchased.
Goods in process:	Semi-finished products still in the manufacturing stage.
Raw materials:	Materials to manufacture products.

c. Other current assets

Temporary claims arising from other than business transactions are collectively referred to as other current assets. Other current assets include non-trade accounts receivable, accrued revenue, prepayments, and prepaid expenses.

Typical titles of account

Non-trade accounts receivable:	Claims arising from the sale of goods other than merchandise that have not been paid for yet and are likely to be settled within one year.
Accrued revenue:	Revenue generated in the current fiscal year but not collected by the closing day. Accrued revenue is temporarily presented as an asset and transferred to the original revenue account at the beginning of the next fiscal year. However, it is more common to use more specific titles of account, such as house rent receivable, interest receivable, and land rent receivable.
Prepaid expenses:	That part of a payment corresponding to the next fiscal year onward. Prepaid expenses are temporarily presented as an asset and transferred to the original revenue account at the beginning of the next fiscal year. However, it is more common to use more specific titles of account, such as prepaid insurance premiums, prepaid interest, prepaid house rent, and prepaid land rent.
Prepayments:	Part of the price for an article paid in advance of the delivery of the article.

② Fixed assets

Fixed assets are assets requiring more than one year to be converted into cash according to the one-year rule or assets to be used for a long time for the enterprise's production or sales activities. Depending on the characters of titles of account, fixed assets are divided into three categories: tangible fixed assets, intangible fixed assets, and investments.

a. Tangible fixed assets

Tangible fixed assets are assets that have physical substance, such as land and buildings, and that are to be used for a long time for the enterprise's business activities such as production and sales.

Tangible fixed assets, except land, lose their value as time passes. In bookkeeping, the loss in value is recorded as depreciation and amortization. The value of each tangible fixed asset is reevaluated at the end of each fiscal year, and the loss in value is presented as an expense.

Typical titles of account

Buildings:	Such buildings as business offices, stores, factories, and warehouses.
Machineries:	Such equipment as working machines, machine tools, chemical machines, and conveyors.
Automotive equipment:	Cars, trucks, and other vehicles for business activities.
Land:	Land owned by the enterprise, such as store and office sites.
Furnitures:	Showcases, desks, chairs, and the like used for business.
Construction in process:	When the construction of a building, machinery, equipment, or the like extends over a long period, the payments already made are temporarily presented as assets. Construction in process is transferred to buildings or machinery, as the case may be, upon completion of the construction.

b. Intangible fixed assets

Intangible fixed assets are assets that do not have physical substance and are to be used for a long time for the operation of the enterprise, such as patent rights, trademark rights, and goodwill.

The cost of acquisition of these rights is the amount paid to acquire them. The value of these assets decreases as they are amortized over their life in years prescribed in the tax law or other laws.

Typical titles of account

Patent rights:	Legal rights held by inventors.
Trademark rights:	Legal rights to the registered trademarks of products.
Goodwill:	Also called a "going concern value." Goodwill is recognized when it is acquired for pay, as in a merger.

c. Investments

Investments are assets being held over a long time for profit making, such as long-term loans and shares in subsidiaries, or assets being held for the purpose of keeping subsidiaries or the like under control.

Typical titles of account

Long-term loans:	Claims arising from the extension of loans to others for a period of more than one year. However, the portion of such a loan to be repaid within one year is classed as a short-term loan and thus a liquid asset.
Investment securities:	Securities being held over a long time for profit making.
Shares in subsidiaries:	Shares in subsidiaries being held over a long time for purposes such as stabilizing their management.

③ Deferred assets

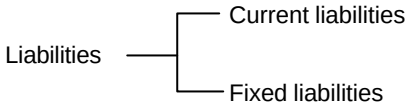
Deferred assets are expenses that are temporarily classed as assets, since their benefits extend to the next fiscal year onward.
There are eight types of deferred assets as shown below. All of them need to be amortized in each fiscal year as expenses.
Amortization periods are prescribed in the Commercial Code.

Titles of account

Bond issue costs:	Expenses incurred for issuing bonds. The amortization period is up to three years.
Stock issue costs:	Expenses incurred for issuing additional shares to increase capital. The amortization period is up to three years.
Start-up costs:	Expenses incurred for preparing to start business after the establishment of the company, such as advertising expenses, communication expenses, and salaries. The amortization period is up to five years.
Organization costs:	The general costs of launching a business concern, such as the expenses for preparing the articles of incorporation and for registering the establishment of the company. The amortization period is up to five years.
Development expenses:	Expenses incurred for the development of new products, new markets, and the like. The amortization period is up to five years.
Research expenses:	Expenses incurred for research on new products and new technologies. The amortization period is up to five years.
Bond issue discounts:	The difference between the face value of bonds and the amount of issue. The amount of issue is smaller than the face value of bonds. The amortization period is the bond redemption period.
Interest during construction:	The amount paid to shareholders for a certain period up to the start of business under the Commercial Code when the company remains idle for two or more years after its establishment. Each time interest exceeding 6 percent of the capital stock is paid per year, the amount equal to or larger than the excess needs to be amortized.

(2) Liabilities

According to the one-year rule and the normal operating cycle rule, liabilities are divided into current liabilities and fixed liabilities.



- One-year rule

  Liabilities that are to be settled within one year of a closing day are current liabilities. For example, a loan to be repaid within a year is a short-term loan and a current liability. A loan not to be repaid within one year is a long-term loan and a fixed liability.

- Normal operating cycle rule

  When liabilities arise as part of a business's main activities (purchasing, production, and sales) are classified as current liabilities even if they are not to be repaid within one year. The normal operating cycle rule applies to such titles of account as accounts payable and notes payable.

  For example, the price of an article sold under an installment contract is to be paid in 36 monthly installments, these installments are not classified into current liabilities and fixed liabilities depending on whether they are payable within one year or not; instead, the entire price is recorded as a current liability.

  However, this rule does not apply to the outstanding balance for a fixed asset purchased, since the purchase is not a transaction made in the course of the main business activities. The balance is recorded as a current liability or a fixed liability according to the one-year rule.

① Current liabilities

Current liabilities are liabilities that must be settled within year according to the one-year rule or liabilities arising in the process of business activity according to the normal operating cycle rule.

Typical titles of account	
Accounts payable:	Liabilities arising for the purchase of merchandise, materials, and services yet to be paid for.
Notes payable:	Notes issued in the course of ordinary transactions whose face amounts are to be paid on promised dates.
Non-trade accounts payable:	Liabilities arising for the purchase of other than merchandise, materials, and services yet to be paid for.
Short-term loans:	Liabilities arising from receiving loans from banks and others repayable within one year.

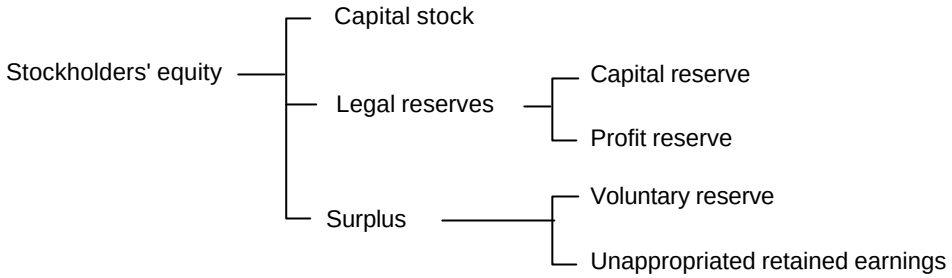
② Fixed liabilities

Fixed liabilities are liabilities not to be settled within one year according to the one-year rule. Fixed liabilities include long-term loans, bonds, and allowance for employee retirement and severance benefits.

Typical titles of account	
Long-term loans:	Liabilities arising from receiving loans from banks and others not repayable within one year.
Bonds:	Debt instruments issued by an enterprise to borrow long-term funds from the general public.
Allowance for employee retirement and severance benefits:	The appropriation made by an enterprise by setting aside estimated amounts to prepare for the payment of benefits to retiring employees.

(3) Stockholders' Equity

Depending on the characters of titles of account, stockholders' equity is classified into three categories: capital stock, legal reserves, and surplus.



① Capital stock

Capital stock means the funds collected from shareholders for the operation of an enterprise.

Typical title of account

Capital stock:	The amount of funds paid in by shareholders. Strictly, capital stock includes the amounts corresponding to free share issues to shareholders and those corresponding to the conversion of convertible bonds.

② Legal reserves

The reserve specified by the Commercial Code. As legal reserves, there are profit reserve and capital reserve.
Legal reserves are used either to be converted into capital stock or to make up a deficit. Legal reserves may not be reversed and used for other purposes.

a. Profit reserve

Profit reserve is the reserve which an enterprise is obligated to have by the Commercial Code by setting aside at least 10 percent of its profit until the total amount reaches one-quarter of its capital stock.

Typical title of account

Profit reserve:	The amount of reserve, which is more than one-tenth, of the amount disbursed by a company as profit disposition out of the profits generated as a result of ordinary transactions conducted by the company.

b. Capital reserve

Capital reserve is the reserve which an enterprise is obligated to have by the Commercial Code by setting aside the amounts arising from capital transactions: stock issues, capital increase or decrease, and mergers. Set aside as capital reserve are additional paid-in capital in most cases.

Typical titles of account

Additional paid-in capital:	This is the part of the amount of a stock issue not converted into capital stock. That is, when the value on the stock market exceeds the face value of the issue, the board of directors may determine the part of the difference not to be converted into capital stock.
Surplus from reduction of capital stock:	This is the amount by which the reduced capital stock exceeds the stock canceled or redeemed or the deficit made up.
Gain from merger:	This is the amount by which the net worth of a company acquired in a merger exceeds the total amount of payments made to the shareholders of the acquired company or the total face value of shares delivered to those shareholders.

③ Surplus

Surplus is different from legal reserves, which are required by law. Surplus is the profit accumulated in accordance with a company policy adopted at a general meeting of shareholders.
There are two types of surplus: voluntary reserve and unappropriated retained earnings.

a. Voluntary reserve

Voluntary reserve is made by setting aside and retaining parts of the company's earnings. Unlike legal reserves, voluntary reserve may be used for the specific purpose for which it is made.

Typical titles of account

Reserve for construction:	Reserve for the construction of a new office building.
Reserve for dividends:	Reserve to pay dividends to shareholders.
Special reserve:	Reserve for no specified purpose.

b. Unappropriated retained earnings

Unappropriated retained earnings are profit that has not been appropriated yet at a general meeting of shareholders. At a general meeting of shareholders, unappropriated retained earnings are divided into the payout portion (i.e., dividends to shareholders and officers' bonuses) and the retained portion (i.e., profit reserve, voluntary reserve, and profit carried forward).

Typical title of account

Unappropriated retained earnings:	The amount obtained by adding the profit brought forward and so forth to net profit and subtracting interim dividends, provision for profit reserve, and so forth from the sum.

(4) Balance Sheet Principles

Balance sheet principles are part of the business accounting principles, which are the "constitution of accounting." Balance sheet principles contain detailed rules for the preparation of the balance sheet.
This section describes some of the balance sheet principles.

① Balance sheet integrity principle

First, the balance sheet principles stipulate that in order to clarify the financial conditions of the enterprise, the balance sheet must state all assets, liabilities, and stockholders' equity as of its date and present them fairly to shareholders, creditors, and other stake holders. What is important about this stipulation concerning the contents of the balance sheet is that "all" assets, liabilities, and stockholders' equity must be stated. This is called the "balance sheet integrity principle."

② Gross amount principle

The balance sheet principles also provide for the statement of amounts of assets, liabilities, and stockholders' equity. The principles stipulate that assets, liabilities, and stockholders' equity must be stated in their gross amounts in principle and that the amounts must not be totally or partly deleted from the balance sheet by offsetting capital items by liability or stockholders' equity items.
That is, assets, liabilities, and stockholders' equity must be presented in their gross amounts; it is prohibited to directly offset the amount of capital by that of liabilities and stockholders' equity. This principle is called the "gross amount principle."

③ Section and arrangement principles

The balance sheet principles also provide for balance sheet sections and the arrangement of balance sheet items. That is, the section and arrangement principles require that the balance sheet be divided into three sections, the assets section, the liabilities section, and the stockholders' equity section, and that the assets section be subdivided into current assets and fixed assets and the liabilities section into current liabilities and fixed liabilities (Figure 1-2-2). The section and arrangement principles further require that asset and liability items be arranged by current-first order.
Current-first order is the method of arranging asset or liability items by declining order of liquidity. The opposite of current-first order arrangement is fixed-first order arrangement.

Figure 1-2-2
Balance Sheet Sections

Balance Sheet

<Assets>	<Liabilities>
Current assets	Current liabilities
Liquid assets	Fixed liabilities
Inventories	
Other current assets	
Fixed assets	< Stockholders' equity >
Tangible fixed assets	Capital stock
Intangible fixed assets	Capital reserve
Investments	Profit reserve
	Surplus
Deferred assets	

1.2.2 How to Read the Income Statement

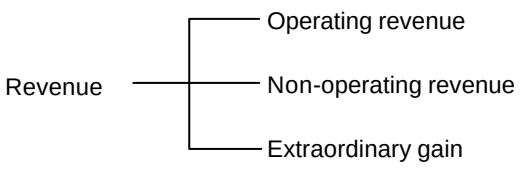
Figure 1-2-3 Example of the Income Statement (Profit and Loss statement; P/L)

From: the date when the term begins
Through: the date when the term ends (Thousands of yen)

Title of Account	Amount
Operating Revenue	35,200
Cost of goods sold	1,200
Gross Income	34,000
Selling, general and administrative expenses	32,000
Operating Income	2,000
Non-operating revenue	960
Non-operating expenses	750
Ordinary Income	2,210
Extraordinary gain	100
Extraordinary loss	210
Income before taxes	2,100
Provision for corporate income and inhabitant taxes	900
Net income	1,200
Balance brought forward	200
Interim dividends paid	50
Profit reserve	20
Unappropriated retained earnings	1,330

(1) Revenue

By character, revenue can be divided into three categories: operating revenue, non-operating revenue, and extraordinary gain.



① Operating revenue

Operating revenue is revenue arising from the main business activity of an enterprise. In the case of general companies, operating revenue is sales themselves. That is, operating revenue may be considered equal to sales revenue in these companies.

Typical title of account

Sales revenue:	Earnings obtained through the essential business activity of an enterprise.

② Non-operating revenue

Non-operating revenue is revenue arising recurringly from activities other than the main business activity of an enterprise. Typical examples are financial revenue such as stock dividends and interest received from financial engineering activities (financial activities).

Typical titles of account

Interest received:	Interest received on loans, deposits, and the like.
Interest on securities:	Interest received on public and corporate bonds and the like.
Gain on sale of securities:	The excess of the sales price of securities such as shares over their carrying value.

③ Extraordinary gain

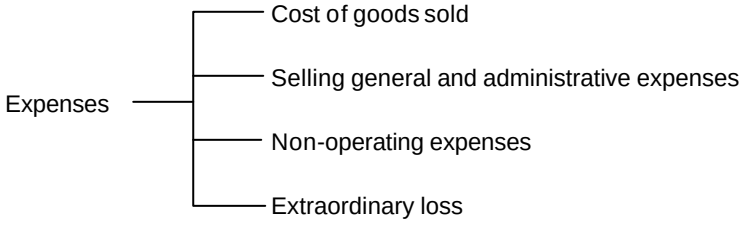
Extraordinary gain is revenue arising temporarily from activities other than the main business activity of an enterprise. The distinction between non-operating revenue and extraordinary gain is whether particular revenue is recurring or temporary. A typical example is a gain on sale of land or a building that was to be owned for a long time.
Other examples of extraordinary gain are the reversal of an allowance used for a purpose other than its originally intended purpose and an increase in revenue arising from the revision or correction of the gain or loss for the previous fiscal year.

Typical title of account

Gain on sale of real estate:	The excess of the sales price of real estate over its carrying value.

(2) Expenses

By character, expenses can be divided into four categories: cost of goods sold, selling, general and administrative expenses, non-operating expenses, and extraordinary loss.



① Cost of goods sold

Cost of goods sold means the expenses incurred for obtaining operating revenue, that is, the cost of merchandise or products themselves. Cost of goods sold is calculated by different methods in the retail business (commercial bookkeeping) and the manufacturing business (industrial bookkeeping). In both methods, however, it is equally important to calculate the cost corresponding to sales by accurately grasping the relations between purchases and inventory.

Typical title of account

Cost of goods sold: The cost of merchandise or products corresponding to sales revenue. It is the cost of goods purchased in the case of merchandise and the cost of goods manufactured in the case of products.

- In the case of the retail business:

  Cost of merchandise = beginning merchandise inventory + merchandise purchased - ending merchandise inventory

- In the case of the manufacturing business:

  Manufacturing expenses = materials expenses + labor expenses + other expenses

  Cost of goods manufactured = beginning inventory of goods in process + manufacturing expenses + ending inventory of goods in process

  Cost of goods sold = beginning product inventory + cost of goods manufactured + ending product inventory

Inventory Valuation Methods

Grasping the cost of goods sold requires accurate valuation of the existing merchandise or product inventory. In practice, the quantities, unit prices, and amounts of merchandise or products are recorded in the book "stock ledger." The goods are thus managed as inventories. At this time, unit prices and amounts are recorded on a cost basis. When goods of the same type were purchased at different unit prices, it is a question as to how to calculate the unit prices. In this case, the unit price is calculated by one of the following methods:

I. First-in first-out method (FIFO)
   The unit price is calculated on the assumption that goods were delivered in the order of their purchase.

II. Last-in first-out method (LIFO)
   The unit price is calculated on the assumption that goods were delivered in the reverse order of their purchase.

III. Moving average method
   Each time goods are purchased, the unit price is calculated in accordance with the following formula:

$$\text{Unit price} = \frac{\text{inventory amount} + \text{purchase price}}{\text{inventory volume} + \text{purchased volume}}$$

② Selling, general and administrative expenses

Selling, general and administrative expenses are expenses incurred to obtain operating revenue. Selling, general and administrative expenses are divided into selling expenses incurred in carrying out selling activities and general and administrative expenses incurred for general business administration, such as accounting and general affairs.
In addition, cost of goods sold and selling, general and administrative expenses are collectively referred to as "operating expenses."

Typical titles of account

Advertising expense:	Fees for advertisements placed in newspapers, magazines, and the like for sales promotion.
Payroll (wages):	Personnel expenses, such as salaries to sales people and office workers.
Office-rent:	Rents for leased offices.
Communication expense:	Postage stamp and post card charges, telephone charges, and so forth.

③ Non-operating expenses

Non-operating expenses are recurring expenses arising from activities other than the main business activity of an enterprise. A typical example is financial expenses such as interest paid on loans.

Typical titles of account

Interest paid:	Interest paid on loans from financial institutions and others.
Loss on sale of securities:	The difference by which the sales price of securities, such as shares, is less than their carrying value.
Amortization of organization costs:	The amortization of organization costs, which are deferred assets.

④ Extraordinary loss

Extraordinary loss means temporary expenses arising from activities other than the main business activity of an enterprise. The distinction between non-operating expense and extraordinary loss is whether a particular expense is recurring or temporary. Examples are a loss on sale or retirement of real estate, such as land or a building, and damage suffered from a natural disaster, such as an earthquake or flood.

Typical titles of account

Loss on sale of real estate:	The difference by which the sales price of real estate is less than its carrying value.
Loss on retirement:	The carrying value of real estate retired (discarded).

(3) Income

Income is revenue less expenses. As described above, there are various types of revenue and expenses, and accordingly there are various types of incomes. The incomes in boxes below will be explained one by one.

Ordinary Income (Loss)

[Operating Revenue (Loss)]

Sales

Cost of goods sold

Gross income on sales (gross income)

Selling, general and administrative expenses

Operating income

[Non-operating Revenue (Loss)]

Non-operating revenue

Non-operating expenses

Ordinary income

Extraordinary Gain (Loss)

Extraordinary gain

Extraordinary loss

Net income before taxes

(Income and inhabitant taxes)

Net income

→

Unappropriated retained earnings

① Gross income on sales (gross income)

Gross income on sales, or simply gross income, is the income after the recovery of cost of goods sold. This is calculated by subtracting cost of goods sold from sales revenue.

Gross income on sales (gross income) = operating revenue (sales) - cost of goods sold

② Operating income

Operating income is the income derived from the main business activity of an enterprise. This is calculated by subtracting selling, general and administrative expenses from gross income on sales.

Operating income = gross income on sales - selling, general and administrative expenses

③ Ordinary income

Ordinary income is the income derived from the overall recurring activities of an enterprise. Since ordinary income is the result of the recurring activities of an enterprise, it describes the overall strength of the enterprise. It is thus the most important indicator of the five different incomes.
Ordinary income is calculated by adding non-operating revenue to operating income and subtracting non-operating expenses from the sum.

Ordinary income = operating income + non-operating revenue - non-operating expenses

④ Net income before taxes

Net income before taxes is the income derived as the result of all transactions during the fiscal year. This is the income on which corporation and other taxes are calculated. In reality, however, net income before taxes shown in the income statement does not necessarily agree with the taxable income in a report submitted to the tax bureau because of the different handling of expenses, losses, and so forth.
Net income before taxes is calculated by adding extraordinary income to ordinary income and subtracting extraordinary loss from the sum.

Net income before taxes = extraordinary income + ordinary income - extraordinary loss

⑤ Net income (net profits, net worth)

Net income is the final profit for the fiscal year. Therefore, the word "income" is used alone, it means net income.
Net income is calculated by subtracting corporate income and inhabitant taxes from net income before taxes.

Net income = net income before taxes - (income tax + inhabitant tax)

⑥ Unappropriated retained earnings

Unappropriated retained earnings represent the profit available to be appropriated for shareholders' dividends, bonuses for officers, profit reserve, voluntary reserve, and so forth.
Unappropriated retained earnings are calculated by adding earnings brought forward and so forth to net income and subtracting interim dividends and others from the sum. Unappropriated retained earnings shown in the income statement agree with unappropriated retained earnings shown under "surplus" in the stockholders' equity section of the balance sheet.

The appropriation of unappropriated retained earnings is stated in the appropriation statement, one of the financial statements.

Unappropriated retained earnings
= net income + (earnings brought forward + reversal of voluntary reserve + ...)
- (interim dividend + provision for profit reserve + ...)

(4) Income Statement Principles

Corporation accounting principles include income statement principles, which have detailed rules for the preparation of the income statement.
This section describes some of the income statement principles.

① Section principle

Income statement principles require that the income statement has sections for the calculation of operating income or loss, that of ordinary income or loss, and that of net profit or loss. This requirement is called the "section principle." In accordance with this principle, the income statement is divided into the ordinary income (loss) section and the extraordinary income (loss) section, the former section showing the income (loss) arising from recurring activities of the enterprise and the latter section showing the income (loss) arising from non-recurring activities. Furthermore, the ordinary income section is subdivided into the operating income (loss) section and the non-operating income section, the former section showing the income arising from the main business activities of the enterprise and the latter section showing the profit arising from other activities (Figure 1-2-4).

Figure 1-2-4 Sections of the Income Statement

Income Statement

<Expenses>	< Revenue >
Cost of goods sold	Operating revenue
Selling, general and administrative expenses	Non-operating revenue
Non-operating expenses	Extraordinary gain
Extraordinary loss	
(Net income)	

② Income statement integrity principle

Income statement principles first require that in order to clarify the operating performance of the enterprise, the income statement presents ordinary income, showing all revenue belonging to a fiscal year and all corresponding expenses, and presents net profit by adding and subtracting extraordinary revenue items to and from ordinary income. What is important about this stipulation concerning the contents of the income statement is that "all" revenue and expenses must be stated. This is called the "income statement integrity principle."

③ Gross amount principle

The income statement principles also provide for the statement of amounts of revenue and expenses.
The principles stipulate that revenue and expenses must be stated in their gross amounts in principle and that the amounts must not be totally or partly deleted from the income statement by offsetting revenue items by expense items.
That is, as in the balance sheet, revenue and expenses must be presented in their gross amounts; it is prohibited to directly offset the amount of revenue by that of expenses. This principle is called the "gross amount principle."

④ Accrual principle

The basis for income determination means a method for recognizing revenue and expenses in a particular year. There are a few different bases:

- Cash basis

  In cash basis accounting, revenue and expenses are recognized in the fiscal year in which cash is actually received and paid out. In this method, accounts receivable and accounts payable are not recorded, whereas advance receipts and advance payments are recorded, thus making it impossible to reasonably calculate the profit for the fiscal year.

- Accrual basis

  In accrual accounting, revenue and expenses are recorded completely irrespective of whether or not cash is received and paid out. That is, revenue and expenses are reflected in income determination as they accrue. In this method, advance receipts and advance payments are not recorded, whereas accounts receivable and accounts payable are.

- Realization basis

  In realization basis accounting, revenue and expenses are basically recorded on an accrual basis with some restrictions on the recording of revenue. That is, only realized revenue is recorded; revenue not yet realized is not. An exception, however, realization basis accounting permits the recording of gain from ongoing construction under a long-term contract.

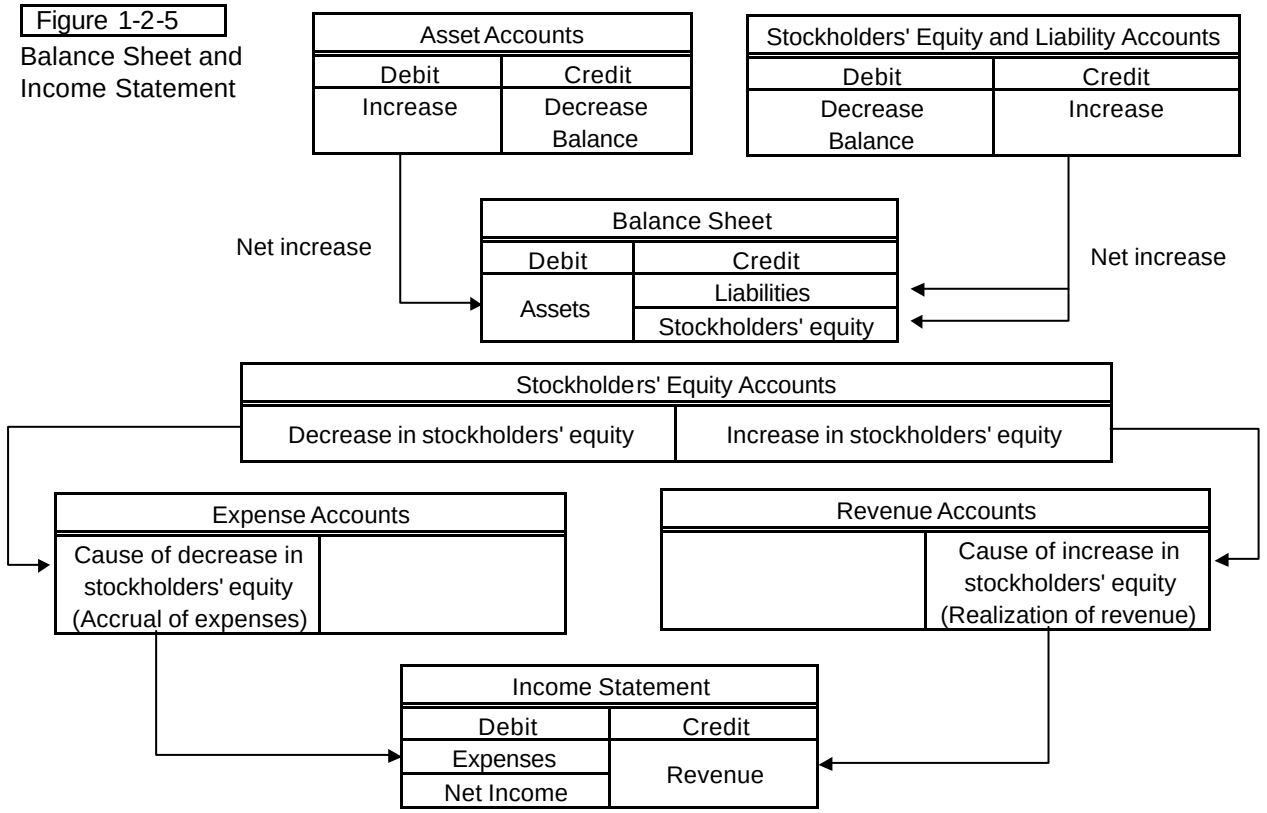
In this respect, income statement principles stipulate as follows: "All expenses and revenue must be recorded as they are paid out and received, being allocated correctly to the year of their accrual. However, revenue not yet realized must not be reflected in income determination in principle. Prepaid expenses and unearned revenue must be excluded from income determination for the current fiscal year, whereas accrued expenses and accrued revenue must be reflected in income determination for the current fiscal year."

This means that expenses must be recorded on an accrual basis and revenue on a realization basis in principle.

⑤ Principle of matching costs with revenues

The principle of matching costs with revenues is one of the income statement principles. This principle is that expenses and revenues must be clearly classified according to the sources of their accrual and that revenue items and corresponding expense items must be presented in a corresponding manner in the income statement. This means that the expenses incurred in a fixed period and the revenues realized in the same period must be presented in a corresponding manner for the purpose of income determination.

Figure 1-2-5
Balance Sheet and Income Statement



(Source: "Class II Common Curriculums" edited by Central Academy of Information Technology, Japan Information Processing Development Corporation)

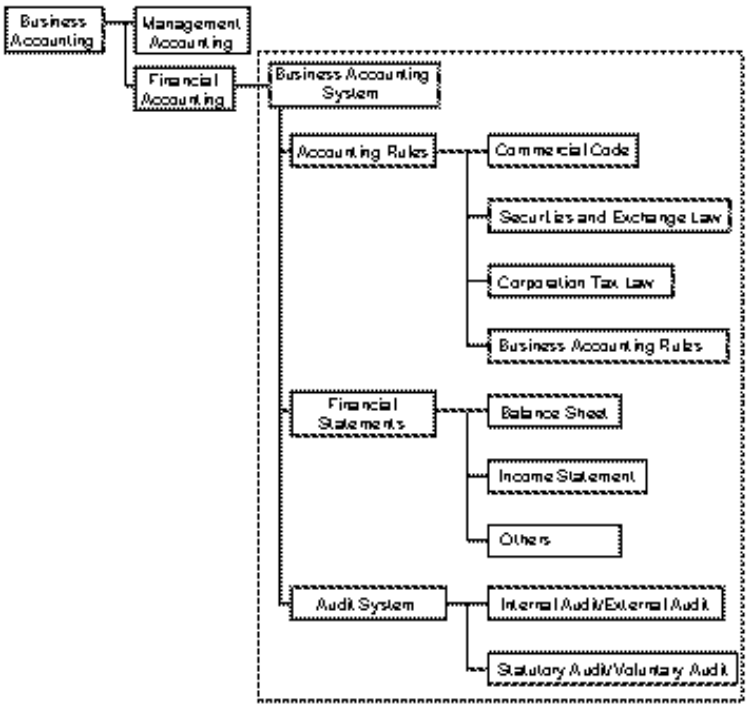
1.3 Financial Accounting and Management Accounting

Financial statements, including the balance sheet and the income statement and other accounting records provide useful accounting information for stakeholders inside and outside a business. Accounting information is divided, according to purpose, into financial accounting and management accounting.

1.3.1 Financial Accounting

The objective of financial accounting is to report the results of activities of a business to the stakeholders, namely, stockholders, employees, creditors, public institutions, and the community. The results of the activities of a business are made public through the balance sheets, the income statement, and other reports. Financial accounting is also called "corporation accounting." As shown in Figure 1-3-1, corporation accounting is governed by various laws and conventions concerning the obligation to prepare financial statements, the standards for preparation, and other regulations.

Figure 1-3-1
Corporation Accounting System



Major laws and conventions concerning the corporation accounting system are outlined below.

(1) Commercial Code

The Commercial Code requires the preparation of financial statements from the viewpoint of creditor protection. The financial statements as defined by the Commercial Code are the balance sheet, the income statement, the business report, and the proposal of appropriation of earnings (or disposition of deficit). All

these statements must conform to the account statement rules ("Regulations Concerning the Balance Sheet, the Income Statement, the Business Report, and Supplementary Schedules of Joint Stock Companies"). Supplementary schedules to these statements must also be prepared.

(2) Securities and Exchange Law

The Securities and Exchange Law requires the preparation of financial statements from the viewpoint of investor protection. The financial statements as defined by the Securities and Exchange Law are the balance sheet, the income statement, supplementary schedules, and the earning appropriation statement. These must conform to the financial statement rules ("Regulations Concerning Terminology, Forms, and Method of Preparation of Financial Statements, etc.").
The appropriation of earnings is prepared as a "proposal" under the Commercial Code because it has to be submitted for approval to the annual meeting of stockholders and as a "statement" under the Securities and Exchange Law. It is prepared after the appropriation is approved at the annual meeting of stockholders.

(3) Corporation Tax Law

To ensure proper taxation, the Corporation Tax Law has various provisions requiring the preparation of financial statements. The law requires a corporation to submit a return on corporation tax accompanied by the balance sheet, the income statement, supplementary schedules, and the appropriation statement.

(4) Corporation Accounting Principles

Corporation accounting principles were established by the Corporation Accounting Council of the Finance Ministry in 1949 and have been amended a number of times since then. Although these principles are not law, they are fair accounting practices that must be always observed. In fact, related laws are based on the "constitution of accounting" based on related laws that are enacted.
The financial statements required by corporation accounting principles are the balance sheet, the income statement, supplementary schedules to financial statements, and the statement of appropriation of earnings (or disposition of deficit).
The corporation accounting principles consist of general principles, income statement principles, and balance sheet principles. They serve as theoretical and practical guiding principles for corporation accounting as well as guidelines for amending and abolishing laws and regulations and for audits.
The general principles are particularly important, spelling out seven fundamental concepts in corporation accounting.

1.3.2 Management Accounting

Management accounting is the type of accounting in which the internal management staff provides top executives with information to administer current affairs and make projections for the future. In management accounting, therefore, information on transactions is provided as well as management baselines or targets, such as numerical plans and budgets. These are established so that actual results can be compared for measurement and analysis. In addition, techniques such as multivariate analysis and econometric analysis are used to provide top management with information for decision making. This is why management accounting is also called "accounting for decision making."
At any rate, management accounting is performed based on the financial statements prepared under the corporation accounting system. The financial statements enable managers to read the enterprise's financial position, operating performance, prospects, and so forth. This process is called business analysis, financial analysis, or financial statement analysis.

(1) Financial Statement Analysis

Business analysis is the process of reading the balance sheet and the income statement and judging whether the enterprise is doing well or not.

Business analysis is classified into the following two types:

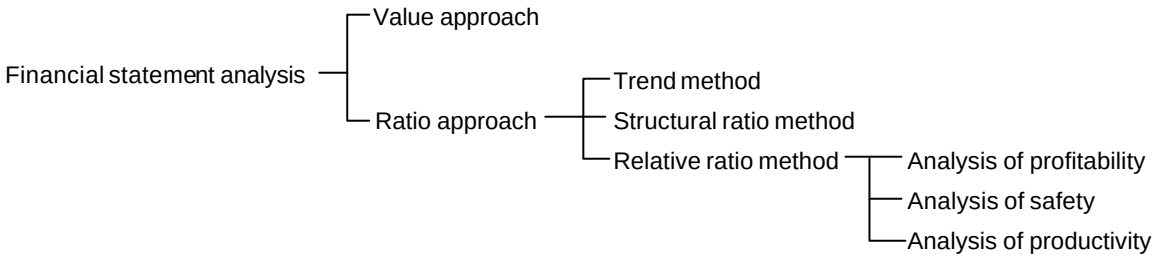
- External analysis:
  This is the analysis performed by outside people to objectively judge the enterprise's financial and operating conditions. External analysis corresponds to financial statements in corporation accounting. Examples of external analysis are investment analysis by investors and the examination of the credit standings of borrowers by financial institutions.
- Internal analysis:
  This is the analysis performed by people inside an enterprise to grasp the current conditions for determining policies for the future. Internal analysis corresponds to management accounting in corporation accounting. An example of internal analysis is the formulation of management plans by managers.

Business analysis techniques fall into the following two categories:

- Value approach:
  This is the approach in which analysis is performed using the values (amounts) stated in financial statements. In a typical method, year-by-year business conditions are compared using a comparative balance sheet, a comparative income statement, and other financial statements summarizing the financial and operating conditions for multiple fiscal years.
- Ratio approach:
  This is the approach in which analysis is performed using the ratios of various values (amounts) stated in financial statements.

The ratio approach can be subdivided into three methods:

- Trend method:
  This method analyzes changes of individual items from a base fiscal year (100).
- Structural ratio method:
  Also called the "percentage method," this method analyzes the ratio of each item to a total amount (100). The total amount is total stockholders' equity in the case of the balance sheet and sales revenue in the case of the income statement.
- Relative ratio method:
  This method analyzes the ratio of one item to another in financial statements.



The relative ratio method is most commonly used in business analysis. The ratios used in this analysis method can be divided into "static ratios," which are the ratios between items stated in the balance sheet, and "dynamic ratios," which are either the ratios between items stated in the income statement or the ratios between items in the balance sheet and those in the income statement.
By the ratios used or purpose, the relative ratio method is subdivided into three types:

- Analysis of profitability
- Analysis of safety (liquidity)
- Analysis of productivity

(2) Analysis of Profitability

The analysis of profitability is performed to check how efficiently an enterprise is making net income.
Five ratios are used for this analysis: the ratio of net income to stockholders' equity, the ratio of net income to sales revenue, the ratio of expenses to sales revenue, the equity turnover, and the asset turnover.

① Ratio of income to stockholders' equity

The ratio of income to stockholders' equity is the percentage of income to the stockholders' equity. This shows how much profit the stockholders' equity has produced. Naturally, the higher the ratio, the higher the profitability of the stockholders' equity.

The typical ratio of income to the stockholders' equity is the ratio of income to gross equity (borrowed equity + owner's equity):

$$\text{Ratio of income to gross equity} = \frac{\text{income before tax}}{\text{gross equity}} \times 100\ (\%)$$

Income in this case is usually net income before taxes.
In this equation, net income (after taxes) or ordinary income may be used as the numerator to determine how much net income (after taxes) or ordinary income the gross equity has produced.
Furthermore, owner's equity may be used as the denominator in this equation to determine how much income the owner's equity has produced:

$$\text{Ratio of net income to owner's equity} = \frac{\text{income}}{\text{owner's equity}} \times 100\ (\%)$$

② Ratio of income to sales

The ratio of income to sales is the percentage of income to sales revenue. This shows how much income was derived from sales, the base of revenue. Therefore, the higher the ratio, the higher the profitability.
This ratio has some variations, depending on different types of income used:

$$\text{Ratio of gross income to sales} = \frac{\text{gross income}}{\text{sales}} \times 100\ (\%)$$

$$\text{Ratio of operating income to sales} = \frac{\text{operating income}}{\text{sales}} \times 100\ (\%)$$

$$\text{Ratio of ordinary income to sales} = \frac{\text{ordinary income}}{\text{sales}} \times 100\ (\%)$$

$$\text{Ratio of net income to sales} = \frac{\text{net income before tax}}{\text{sales}} \times 100\ (\%)$$

The ratio of income to sales enables the comparison of the profitability levels of an enterprise over multiple years or with those of competitors.
In addition, the comparison of the variations of this ratio shown above enables the important work of determining at which level income is small or high.

③ Ratio of expenses to sales

The opposite of the ratio of income to sales, the ratio of expenses to sales is the percentage of expenses to sales revenue. Since smaller expenses means larger profit, the lower this ratio, the higher the profitability.
This ratio has some variations, depending on different types of expenses used:

$$\text{Ratio of cost to sales} = \frac{\text{cost of goods sold}}{\text{sales}} \times 100\ (\%)$$

$$\text{Ratio of selling, general and administrative expenses} = \frac{\text{selling, general and administrative expenses}}{\text{sales revenue}} \times 100\ (\%)$$

The sum total of the ratio of gross income to sales and the ratio of cost of goods sold to sales revenue is 1.
Meanwhile, it is important to use subdivided expenses as the numerator to learn which expenses are increasing or decreasing. For example, expenses affecting the performance of an enterprise, such as raw materials cost (a component of the cost of goods sold), advertising expenses (a component of selling, general and administrative expenses), and interest paid on loans are used as the numerator as shown below.

$$\text{Ratio of raw materials cost to sales} = \frac{\text{raw materials cost}}{\text{sales}} \times 100\ (\%)$$

$$\text{Ratio of advertising expenses to sales} = \frac{\text{advertising expenses}}{\text{sales}} \times 100\ (\%)$$

$$\text{Ratio of interest paid to sales} = \frac{\text{interest paid}}{\text{sales}} \times 100\ (\%)$$

④ Equity turnover

Equity turnover is the percentage of sales to stockholders' equity. This ratio shows how many times the stockholders' equity was used in an accounting period. The higher the ratio, the higher the profitability.
Equity turnover is either gross equity turnover or owner's equity turnover, depending on whether gross equity or owner's equity is used as the numerator:

$$\text{Gross equity turnover} = \frac{\text{sales}}{\text{shareholders' equity}}\ \text{(number of times)}$$

$$\text{Owner's equity turnover} = \frac{\text{sales}}{\text{owner's equity}}\ \text{(number of times)}$$

An enterprise invests capital, obtains revenue by using it, and records income. As a result, the enterprise can invest additional capital. This flow is a single turn of capital. Gross equity turnover shows how many times the invested capital was turned over within an accounting period and how much it contributed to sales.
High turnover means that relatively small capital has produced relatively large sales. That is, high turnover means that stockholders' equity has been used effectively.

⑤ Asset turnover

Asset turnover is the percentage of sales or cost of goods sold to assets. This ratio shows the number of times assets were used in an accounting period. The higher the ratio, the high the profitability.
Asset turnover has some variations, depending on what is used as the denominator as shown below:

$$\text{Merchandise turnover} = \frac{\text{cost of goods sold}}{\text{average merchandise inventory}}\ \text{(number of times)}$$

The higher the merchandise turnover, the fewer the number of days required for a single turn of inventory. That is, a high merchandise turnover means that merchandise is selling well. The average merchandise inventory is obtained as follows:
(beginning merchandise inventory + ending merchandise inventory) ÷ 2.
If cost of goods sold is unknown, sales may be used instead as the numerator.

$$\text{Fixed asset turnover} = \frac{\text{sales}}{\text{fixed assets}}\ \text{(number of times)}$$

The higher the fixed asset turnover, the more effectively the fixed assets are used. If the ratio is low, it means that equipment investment is excessive.

$$\text{Receivables turnover} = \frac{\text{sales}}{\text{notes receivable + accounts receivable}}\ \text{(number of times)}$$

The higher the receivables turnover, the more promptly receivables are collected. That is, a high receivables turnover means the enterprise is free from concern about cash flow.
Since the amount of total assets is equal to that of gross equity, a high turnover of each component of total assets leads to a high gross equity turnover.

(3) Analysis of Safety

A safety analysis is used to determine whether the assets necessary for business activities are operated in a sound manner and whether financial conditions, such as the ability to pay, are good enough. The analysis of safety is also called the "analysis of liquidity."
The safety of an enterprise is analyzed based on static ratios, or based on the relations between the asset, liability, and stockholders' equity items on the balance sheet, from the viewpoints of short-term and long-term safety.

① Short-term safety ratios

A short-term safety ratio is a ratio to examine the enterprise's current ability to pay. A high short-term safety ratio means that the enterprise is financially safe or has an adequate cash flow. There are two major short-term safety ratios, the current ratio and the acid test ratio, depending on whether current assets or liquid assets is used as the numerator.

$$\text{Current ratio} = \frac{\text{current assets}}{\text{current liabilities}} \times 100\ (\%)$$

The current ratio shows the enterprise's ability to pay liabilities. It is the percentage of current assets to current liabilities. More specifically, the ratio shows how much the enterprise has in assets that can be converted into cash in a short period to cover liabilities that need to be paid in the short period. It is generally considered desirable that the current ratio be 200 percent or more.

$$\text{Acid test ratio} = \frac{\text{liquid assets}}{\text{current liabilities}} \times 100\ (\%)$$

The acid test ratio is the percentage of liquid assets to current liabilities. Although this ratio also concerns the ability to pay, it shows how much the enterprise has in assets that can be converted into cash more readily. Naturally, the acid test ratio is lower than the current ratio. It is generally considered desirable that the acid test ratio be 100 percent or more.

② Long-term safety ratios

Long-term safety ratios measure the enterprise's potential ability to pay over a long term. High long-term safety ratios mean that the enterprise is financially safe.

$$\text{Owner's equity ratio} = \frac{\text{owner's equity}}{\text{total assets}} \times 100\ (\%)$$

The owner's equity ratio is the percentage of owner's equity to total assets. A high owner's equity ratio means a small amount of liabilities (borrowed equity and liabilities), that is, a sound financial position.

$$\text{Debt ratio} = \frac{\text{total liabilities}}{\text{owner's equity}} \times 100\ (\%)$$

$$\text{Debt/equity ratio} = \frac{\text{owner's equity}}{\text{total liabilities}} \times 100\ (\%)$$

The debt ratio is the percentage of total liabilities to owner's equity. The debt/equity ratio is the percentage of owner's equity to total liabilities. Both ratios are used to check whether the enterprise has too many liabilities as compared with its owner's equity. If the enterprise can cover all its liabilities with its owner's equity, its financial position is safe. Therefore, it is desirable that the debt/equity ratio be 100 percent or over. Conversely, the debt ratio should be low.

$$\text{Owner's equity to fixed asset ratio} = \frac{\text{owner's equity}}{\text{fixed assets}} \times 100\ (\%)$$

$$\text{Fixed ratio} = \frac{\text{fixed assets}}{\text{owner's equity}} \times 100\ (\%)$$

$$\text{Fixed assets to long-term equity ratio} = \frac{\text{fixed assets}}{\text{owner's equity + fixed liabilities}} \times 100\ (\%)$$

The owner's equity to fixed asset ratio is the percentage of owner's equity to fixed assets. The fixed ratio is the percentage of fixed assets to owner's equity. Both ratios show the how large a part of owner's equity is used as fixed assets. Financially, it is desirable that fixed assets be covered by part of owner's equity and that the remainder of owner's equity be applied as current assets. It is in turn desirable that the owner's equity to fixed asset ratio be 100 percent or over and that the fixed ratio be less than 100 percent. The fixed assets to long-term equity ratio is based on the idea that even if fixed assets cannot be covered by owner's equity, it should be covered by the total of owner's capital and fixed liabilities that need not be paid for the time being.

(4) Break-Even Analysis

The break-even point is a point at which an enterprise makes neither a profit nor a loss, that is, a point at which an enterprise makes no operating income. Sales at this point are called "break-even sales revenue." In commercial bookkeeping, values on financial statements are analyzed in terms of ratios for the purpose of profitability and safety analysis. In industrial bookkeeping (manufacturing industries), break-even analysis is widely used.

① Income planning

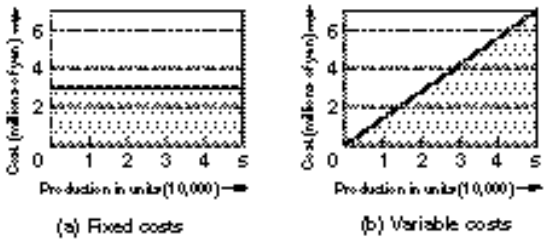
Income planning is the process of setting an income target for a certain future period and planning business activities to achieve the target. Break-even analysis is a particularly effective method for formulating a short-term profit plan.
That is, an income plan is made by grasping how costs will change when sales, production, and other business activities change. The method used at this time to control costs is called "direct costing."

② Fixed costs and variable costs

In direct costing, expenses are divided into fixed costs and variable costs for the purpose of control.

- Fixed costs:
  Expenses that remain constant in total, regardless of changes in sales or production. These expenses are required to maintain sales and production activities and are incurred even if sales or production is zero. Fixed costs include rents, insurance premiums, taxes, and depreciation and amortization costs.
- Variable costs:
  Expenses that increase or decrease in direct proportion to sales or production. Variable costs increase if sales or production increases and decreases if sales or production decreases. Variable costs includes direct materials expenses, packing and transportation expenses, commissions to consignees, wrapping expenses, and commissions to sales representatives.

Figure 1-3-2
Fixed Costs and Variable Costs



③ Fixed cost ratio and variable cost ratio

The percentages of fixed costs and variable costs to sales are called the "fixed cost ratio" and the "variable cost ratio," respectively.

$$\text{Fixed cost ratio} = \frac{\text{fixed costs}}{\text{sales}} \times 100\ (\%)$$

$$\text{Variable cost ratio} = \frac{\text{variable costs}}{\text{sales}} \times 100\ (\%)$$

④ Break-even sales revenue

If three figures—fixed costs, variable costs, and sales—are known, break-even sales revenue can be immediately calculated by the following equation:

$$\text{Break-even sales revenue} = \frac{\text{fixed costs}}{1 - \dfrac{\text{variable costs}}{\text{sales}}} = \frac{\text{fixed costs}}{1 - \text{variable cost ratio}}$$

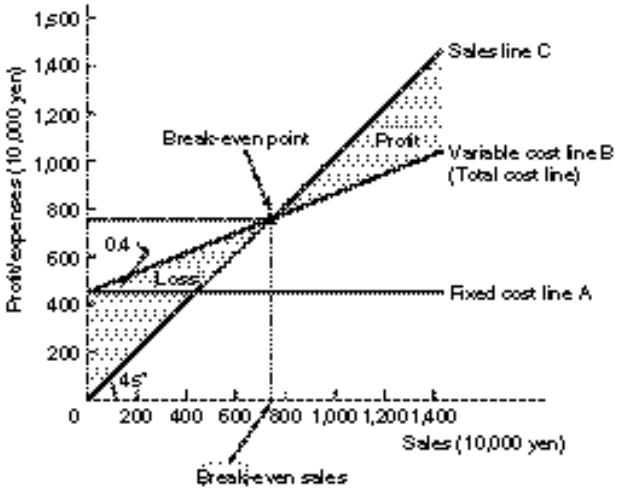
For example, when fixed costs are 45 million yen, variable costs 3.6 million yen, and sales 9.0 million yen, break-even sales revenue are calculated as follows:

$$\text{Break-even sales revenue} = \frac{4.5}{1 - \frac{3.6}{9.0}} = 7.5 \text{ (million yen)}$$

⑤ Profit and loss chart

Break-even sales can be calculated not only by the equation shown above but also by drawing a chart. A chart drawn for this purpose is called a "profit and loss chart" or a "break-even chart."
The profit and loss chart shows the relations between sales, expenses, and operating income. It shows how expenses and profit change when sales increase or decrease.
When fixed costs are 4.5 million yen, variable costs 3.6 million yen, and sales 9.0 million, the profit chart is drawn as follows:

Figure 1-3-3
Profit and Loss Chart



1. The horizontal axis represents sales, and the vertical axis represents profit and expenses.
2. Plot fixed cost of 4.5 million yen on the vertical axis, and from that point, draw line A in parallel to the horizontal axis. Line A is a fixed cost line.
3. From the position of 4.5 million yen on the vertical axis, draw gradient line B that represents the variable cost ratio. Line B is a variable cost line. The variable cost ratio is calculated as follows: variable costs (3.6 million yen) / sales (9.0 million yen) = 0.4. When fixed costs are also taken into account, line B represents total costs.
4. With respect to sales, draw gradient line C from the point of origin at an angle of 45 degrees. Line C is a sales line.
5. The break-even point is the point of intersection of the sales line C and the variable cost line B. The point of intersection of a line drawn from this point perpendicularly to the horizontal axis and the horizontal axis represents break-even sales (7.5 million yen).

⑥ Marginal profit

Marginal profit, also called "contribution profit," is calculated by subtracting variable costs from sales. Therefore, profit can be calculated by subtracting fixed costs from marginal profit.
In direct costing, expenses are considered in two stages. In the first stage, variable costs are recovered from sales, and in the second stage, fixed costs are recovered, figuring out operating income. Marginal profit means the gain calculated in the first stage.
The ratio of marginal profit to sales is called a "marginal profit ratio." The sum total of the marginal profit ratio and the variable cost ratio is 1.

$$\text{Marginal profit} = \text{sales} - \text{variable costs}$$

$$\text{Marginal profit ratio} = \frac{\text{marginal profit}}{\text{sales}} \times 100 \text{ (\%)}$$

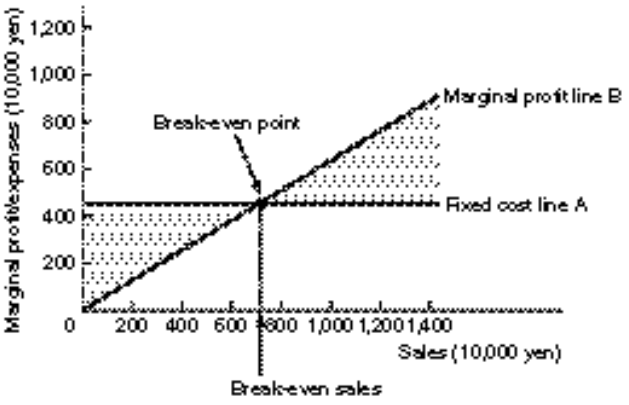
Meanwhile, the equation for calculating break-even sales mentioned above is written as follows using marginal profit:

$$\text{Break-even sales revenue} = \frac{\text{fixed costs}}{1 - \text{variable cost ratio}} = \frac{\text{fixed costs}}{\text{marginal profit ratio}}$$

⑦ Method of drawing a marginal profit chart

The marginal profit chart shows the relations between marginal profit, fixed costs, and profit (loss). Therefore, while the chart is unsuitable for the control of sales and variable costs, it makes it possible to quickly grasp the relation between fixed costs and profit (loss). This is a convenient chart for enterprises handling large varieties of products.
For example, let's draw a marginal profit chart when fixed costs are 4.5 million yen, variable costs 3.6 million yen, and sales 9.0 million yen.

Figure 1-3-4
Marginal Profit Chart

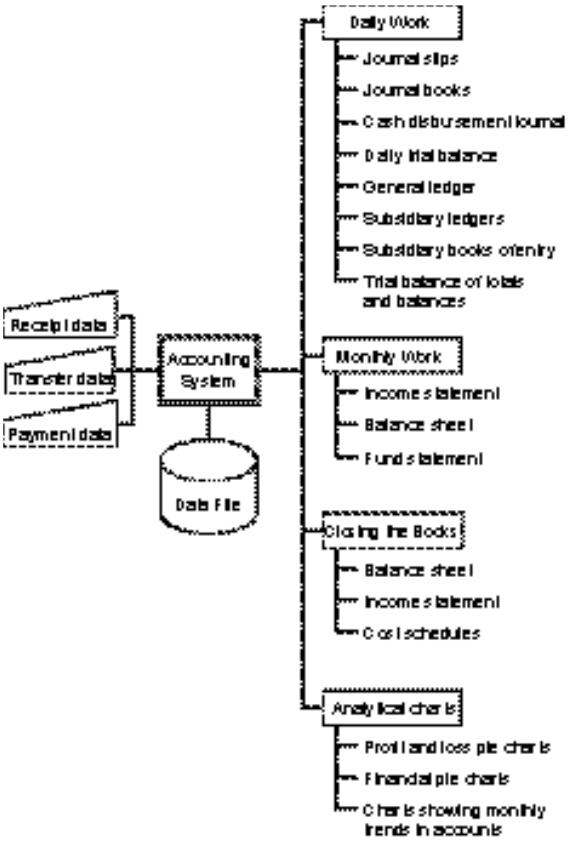


1. The horizontal axis represents sales, and the vertical axis represents marginal profit and expenses.
2. Plot fixed cost of 4.5 million yen on the vertical axis, and from that point, draw line A in parallel to the horizontal axis. Line A is a fixed cost line.
3. From the point of origin, draw gradient line B that represents the marginal profit ratio. Marginal profit can be calculated as follows: sales (9.0 million yen) - variable costs (3.6 million yen) = 5.4 million yen. Therefore, the marginal profit ratio is calculated as follows: 5.4 million yen ÷ 9.0 million yen (sales) = 0.6. Line B is a marginal profit line.
4. The break-even point is the point of intersection of fixed cost line A and marginal profit line B. The point of intersection of a line drawn from this point perpendicularly to the horizontal axis and the horizontal axis represents break-even sales (7.5 million yen).

1.3.3 Accounting Information System Configuration

An accounting information system is a computer system for accurately and speedily performing business accounting as described above.
There have recently been demands for accounting information systems that will provide accurate information to external stakeholders, but that will also provide management accounting data.
A typical configuration of the accounting information system is shown in Figure 1-3-5.

Figure 1-3-5
Example of Accounting Information System Configuration

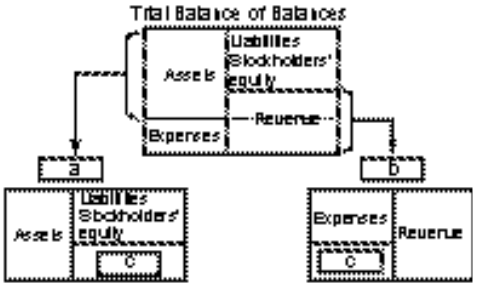


Exercises

Q1 Which statement about financial statements is incorrect?

A. P/L stands for the balance sheet, and B/S the income statement.
B. The balance sheet also shows the enterprise's net income.
C. Financial statements are prepared based on journal slips.
D. The income stated on the income statement includes operating income, ordinary income, and net income.
E. The balance sheet and the income statement are the most basic, most important financial statements.

Q2 Which is the appropriate combination of terms to put in the boxes in the following figure to show the relation between the balance sheet and the income statement?



	a	b	c
A	Income statement	Balance sheet	Costs
B	Income statement	Balance sheet	Net income
C	Balance sheet	Income statement	Costs
D	Balance sheet	Income statement	Net income

Q3 Which is the appropriate combination of terms to be put in the boxes in the following income statement?

Income Statement (From _____ through _____)

Sales	XXXX		
Cost of goods sold	XXXX	Gross income on sales	XXXX
Selling, general and administrative expenses	XXXX	a	XXXX
Non-operating revenue	XXXX		
Non-operating expenses	XXXX	b	XXXX
Extraordinary gains	XXXX		
Extraordinary loss	XXXX	Net income before taxes	XXXX
Corporation tax, etc.	XXXX	c	XXXX
Retained earnings from previous year	XXXX	d	XXXX

	a	b	c	d
A	Operating income	Ordinary income	Unappropriated retained earnings	Net income
B	Operating income	Ordinary income	Net income	Unappropriated retained earnings
C	Ordinary income	Operating income	Unappropriated retained earnings	Net income
D	Ordinary income	Operating income	Net income	Unappropriated retained earnings
E	Ordinary income	Net income	Operating income	Unappropriated retained earnings

Q4 **Shown below is an income statement for a fiscal year. How large is the operating income for the year?**

(Millions of yen)

Title of Account	Amount
Sales revenue	1,500
Cost of goods sold	1,000
Selling, general and administrative expenses	200
Non-operating income	40
Non-operating expenses	30

A. 270 B. 300 C. 310 D. 500

Q5 **Suppose that an income statement has been prepared from the manufacturing cost statement shown below. How large is the gross income on sales? (Amounts in thousands of yen)**

Manufacturing Cost Statement

Materials expenses	400
Labor expenses	300
Other expenses	200
Total manufacturing cost	
Beginning work in process inventory	150
Ending work in process inventory	250
Product manufacturing cost	

Income Statement

Sales revenue	1,000
Cost of goods sold	
Beginning product inventory	120
Product manufacturing cost	
Ending product inventory	70
(Cost of goods sold)	
Gross income on sales	

A. 150 B. 200 C. 310 D. 450

Q6 **Figure out gross income on sales from the following data. (Amounts in thousands of yen)**

[Manufacturing Cost Statement]		[Income Statement]	
1. Materials expects	500	1. Gross sales of products	2,000
2. Labor expenses	300	2. Sales returns	150
3. Other expenses	150	3. Sales discounts	150
4. Beginning work in process inventory	200	4. Beginning product inventory	600
5. Ending work in process inventory	300	5. Ending product inventory	400

A. 650 B. 750 C. 850 D. 950 E. 1,050

Q7 **When the analysis of financial statements at the end of a fiscal year produces figures ① to ③ shown below, what is the cost of goods sold? Note that the figures are all in thousands of yen and that the cost of goods sold ratio can be obtained by dividing cost of goods sold by sales revenue.**

① Ratio of cost of goods sold: 80%
② Ratio of operating profit to sales: 10%
③ Operating profit: 200

A. 1,200 B. 1,400 C. 1,600 D. 1,800 E. 2,000

Q8 **Of the following current assets, which is a liquid asset?**

A. Accounts receivable B. Work in process C. Short-term loan
D. Advance payment E. Non-trade accounts receivable

Q9 **Which is the equation for calculating the current ratio, which shows the degree of safety of short-term loans?**

A. $\frac{\text{current assets}}{\text{fixed assets}}$ B. $\frac{\text{current assets}}{\text{total assets}}$ C. $\frac{\text{current assets}}{\text{current liabilities}}$

D. $\frac{\text{current liabilities}}{\text{gross equity}}$ E. $\frac{\text{current liabilities}}{\text{total liabilities}}$

Q10 **Which is the correct statement about the break-even point?**

A. Where fixed costs remain unchanged, if the variable cost ratio rises, the break-even point lowers.
B. The break-even point means the level of sales at which the enterprise makes neither a profit nor a loss.
C. The break-even point indicates the degree to which assets are fixed.
D. Where the variable cost ratio remains unchanged, if fixed costs increase, the break-even point lowers.

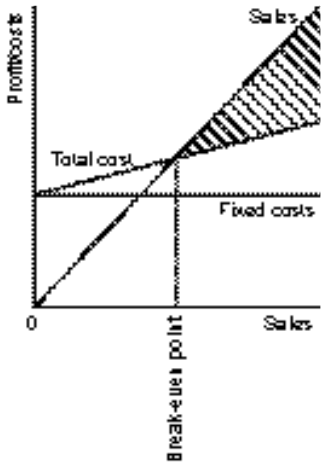
Q11 **Calculate break-even sales from the following income statement.**
(Amounts in thousands of yen)

Table Income Statement

Title of Account	Amount
Sales	1,000
Variable costs	800
Fixed costs	100
Profit	100

A. 500 B. 600 C. 700 D. 800 E. 900

Q12 **In the following chart showing a break-even point, what is represented by the upper right area (the diagonally shared area above the break-even point) enclosed by the sales line and the total cost line?**



A. Operating loss B. Operating income C. Ordinary income D. Marginal profit

Q13 **There are goods whose unit purchase price is gradually rising. There was an inventory of these goods at the end of the last accounting period, and the goods were carried into and out of the warehouse several times during the current period. Which of the following valuation methods produces the highest valuation of the inventory at the end of the current period?**

A. Last-in first-out method
B. Moving average method
C. First-in first-out method
D. Average cost method

Q14 **When the first-in first-out method is applied to the receipt and delivery record shown below, what is the cost of goods sold for March?**

March	1.	Beginning inventory:	100 units	Unit price:	30 yen
	6.	Purchased:	50 units	Unit price:	50 yen
	10.	Sold:	50 units		
	17.	Purchased:	50 units	Unit price:	40 yen
	25.	Sold:	100 units		
	31.	Ending inventory:	50 units		

A. 4,000 B. 4,500 C. 5,000 D. 5,500 E. 6,500

Q15 **Shown below are the beginning inventory and purchases and sales during the current accounting period. When the inventory is evaluated by the last-in first-out method at the end of the current accounting period, how large is the inventory value?**

Purchases

Date	Volume (units)	Unit Price (yen)
Beginning inventory	10	100
May 1	15	90
Oct. 15	5	70

Sales

Date	Volume (units)
April 20	4
August 31	8
November 20	6

A. 840 B. 980 C. 1,080 D. 1,180

Q16 **Select from among the answers at the bottom the appropriate figures to be put in the boxes below based on the following statements regarding financial analysis:**

Store A's financial data for fiscal 2000 was as shown below.

<Data>

(1) The acid test ratio is $\frac{30{,}000{,}000\,\text{yen}}{15{,}000{,}000\,\text{yen}} \times 100\,(\%)$.

(2) The owner's equity ratio is $\frac{20{,}000{,}000\,\text{yen}}{45{,}000{,}000\,\text{yen}} \times 100\,(\%)$.

(3) The fixed ratio is 60%.
(4) The current ratio is 220%.
(5) The debt ratio is 125%.

Balance Sheet

(Thousands of yen)

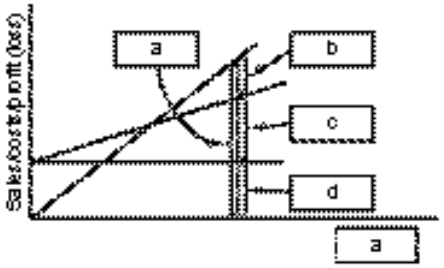
Assets	Amount	Liabilities & Stockholders' Equity	Amount
Liquid assets	a	Current liabilities	d
Inventories	b	Fixed liabilities	e
Fixed assets	c	Stockholders' equity	f
Total Assets	g	Total Liabilities & Stockholders' Equity	g

Answers

A. 3,000	B. 10,000	C. 12,000	D. 15,000
E. 18,000	F. 20,000	G. 25,000	H. 30,000
I. 45,000	J. 48,000		

Q17 Select from among the answers at the bottom the appropriate terms to be put in the boxes in the statements regarding break-even analysis.

(1) Select from among the answers the appropriate terms describing parts a through d of the break-even chart.



Break-Even Chart

(2) The amounts for a through d for an accounting period are as follows:

a. 10,000,000 yen
b. 2,000,000 yen
c. 6,000,000 yen
d. 2,000,000 yen

In this case, break-even sales are [e] yen.
If the amount for a becomes 20,000,000 yen, the amount for b is [f] yen.

Answers for a through d:

A. Selling, general and administrative expenses		B. Sales	C. Accounts receivable	
D. Fixed costs	E. Manufacturing cost	F. Loss	G. Variable costs	H. Profit

Answers for e and f:

A. 300	B. 400	C. 500	D. 600
E. 700	F. 800		